Spring 2008

Syn'apse

- Measuring movement performance in the acute setting: the development of the LEEDS Movement Performance Index
- Improving the postural orientation of distal reference points will improve postural control for functional reach
- Outcome measurement by physiotherapists who work in neurology

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JOURNAL AND NEWSLETTER OF THE **ASSOCIATION OF CHARTERED PHYSIOTHERAPISTS INTERESTED IN NEUROLOGY**

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ACPIN'S AIMS

1. To encourage, promote and facilitate the exchange of ideas between ACPIN members within clinical and educational areas.
2. To promote the educational development of ACPIN members by encouraging the use of evidence-based practice and continuing professional development.
3. To encourage members to participate in research activities and the dissemination of information.
4. To develop and maintain a reciprocal communication process with the Chartered Society of Physiotherapy on all issues related to neurology.
5. To promote networking with related organisations and professional groups and improve the public's perception of neurological physiotherapy.
6. To encourage and participate in the setting of guidelines within appropriate areas of practice.
7. To be financially accountable for all ACPIN funds via the Treasurer and the ACPIN committee.

FROM THE CHAIR

Hello and welcome to my final *Synapse* introduction as Chair of ACPIN.

As I write, the Executive Committee are in the final stages of organising our residential conference and AGM, 'Acquired Brain Injury: Competency with the Complex' and, by the time you read this, we hope to have held another really successful event in our residential conference series!

On the topic of events, the ACPIN contribution to the neurology strand for CSP Congress 2008, 17th and 18th October in Manchester, is looking very impressive, with Anne Shumway Cook as keynote speaker alongside many other highly renowned names in the world of neurorehabilitation – do take advantage of the early bird discounts and get your place booked up for the relaunch of this international event. We owe an enormous debt of gratitude to Siobhan MacAuley who has co-ordinated the neurology programme with such drive and professionalism.

The challenge of developing our new membership system has been enormous – to move from the laborious inputting by hand of all your membership data to our fabulous online database and direct debit payment system, has been a huge commitment, particularly for Jo Tuckey and Mary Cramp, who I would like to thank on behalf of the committee and membership. We expect some minor hiccoughs, as with any new system, but do bear with us as this really will be a much more viable system for the future. Please remind colleagues who may not have yet re-joined that the system is now live.

This summer is very significant in terms of the production of stroke guidelines – the Royal College of Physicians will be launching the new *National Clinical Guidelines for Stroke* in July, alongside NICE who will be launching the *Management of Acute Stroke Guidelines*. Dr Sheila Lennon, Chris Fitzpatrick and myself continue to represent physiotherapy at the RCP and Rhoda Allison has done some great work in keeping the ACPIN flag flying at NICE. It is very important that we continue to have a significant voice on these working parties and we are always grateful for any comments you can make on relevant documents.

In order to improve our communication and utilise the tremendous knowledge base within the ACPIN membership, Louise Rogerson and Sandy Chambers are heading up a project group exploring a scoping exercise to glean information on those therapists throughout the regions who may be happy to contribute to consultations and queries. More of this inside this issue.

This year sees the departure of some long serving members of the Executive after considerable service to the committee and an acknowledgement of their tremendous work and thanks on behalf of us all can be found in the Chair's address to the AGM on page 25.

That just leaves me to bid you all farewell as I depart the Chair's seat and the Executive Committee after ten years. This has been a challenging, thought-provoking and exciting time for me. I have made many wonderful friends and the commitment of my colleagues in neurorehabilitation across the country is very humbling. I have been honoured to be part of this organisation for so long, but am delighted to hand over to Jo Tuckey and Cherry Kilbride, who I know will do an incredible job on behalf of you all. So its goodnight from me, and hello from them...

Best wishes

Nicola

FROM THE CHAIRS

Hello from us!

Filling the shoes of Nicola, as Chair of National ACPIN was going to be a gargantuan task for any one person following on. We therefore decided a 'double act' and sharing the role for a year was the best way serve the committee and the membership as a whole!

However we know we are not alone. ACPIN is one of the biggest special interest groups and we look forward to harnessing the 'power of the membership' to help us in our duties. For example, ACPIN as a respected voice of neurological physiotherapists in the UK (and increasingly beyond our shores) is frequently asked to comment on various documents and reports so we are very keen to make use of the wealth of resource throughout the membership. So please do participate in the up and coming scoping exercise, it is crucial if we are to truly reflect the views and opinion of ACPIN.

It goes without saying that with your help we aim to continue the high standard that has been set for our national ACPIN events. We are already planning the 2009 one day conference, which will focus on rehabilitation of the upper limb and will continue to provide leadership to future neurology programmes at Congress.

Finally thank you all for being part of ACPIN and we are both looking forward to working with you in the coming year.

Jo and Cherry

Measuring movement performance

in the acute setting: the development of the LEEDS Movement Performance Index

Denise Ross MCSP PGDip MSc

Within the field of neurological rehabilitation, a Bobath trained physiotherapist assesses and treats the underlying impairments that constrain function and participation, for example the patient may have an inability to stabilise their scapula on their thorax and therefore suffer from impaired upper limb function, and be dependent on carer support during ADL. The impairment is treated specifically before enabling activity within the context of meaningful function. In other words, the 'micro detail' is changed during treatment to give more efficient bio-mechanics of the movement which alters the efficiency of the 'macro' detail of function (IBITA 2006; Edwards 2002; Shumway-Cook & Woollacott 2001; Stokes 1998).

There is an abundance of validated outcome measures that measure movement and function currently available for neurological physiotherapists to use, for example the Berg Balance Scale (Berg et al 1992), the Ten Metre Walk (Wade 1992) the Trunk Control Test (Frangignoni et al 1997), the Postural Assessment Scale for Stroke (Benaim et al 1999), the Modified Rivermead Mobility Index (Lennon, Johnson 2000), the Motor Assessment Scale (MAS) (Carr et al 1985) and TELER (Le Roux 1993; Mawson 1995, 2002). However, it is difficult to find a tool that measures change affected during physiotherapy intervention at component or impairment level.

Boyce et al (1993) developed a scale that measured the quality or performance of the cerebral palsied child's movement, which could be used in conjunction with a previously developed scale of motor function. In practical terms, the resulting measurement tool could be used to measure change over time, compare change to intensity of input, and compare change to surgical intervention. The tool could also be used to support clinical reasoning for physiotherapy treatment planning and the demonstration of treatment effectiveness.

Within the last thirteen years there has been a significant amount of research within the field of balance and postural control in adult neurology focusing on the measurement of outcome at impairment rather than at functional level. Nieuwboer et al (1995) developed a scale, based on the visual observation of balance posture and trunk activity in sitting, for stroke patients. The tool was designed to be used by physiotherapists for the monitoring of clinical progress, treatment outcome, effect of intervention and to be quick, easy, reliable and valid for use. This study found that the items which did not measure the quality of the movement or posture had good reliability, whereas the items which did measure the quality of the movement (assessment of selective and symmetrical movement) only achieved moderate or slight reliability, possible due to the variance of clinical knowledge and experience between the testers, resulting in measurement error.

During a more recent study by Verheyden, Nieuwboer et al (2004) the Trunk Impairment Scale was developed by removing some items of poor reliability and redefining other items. The authors state that this scale could be used as a guide for physiotherapy treatment, but it only looks at trunk control in sitting. It could be that the measurement of the quality of trunk control in sitting can be generalised and a predictor to the patients' overall quality of their postural control, but this isn't claimed in the study.

Mawson (1995) developed a set of movement indicators for use by physiotherapists when treating neurologically damaged patients. The movement indicators were developed to fit with the TELER technique of measurement. They were developed during a two-year project, using the clinical experience of a group of senior neurological physiotherapists. The indicators were given

face validity by the British Bobath Tutors Association, and given concurrent validity when compared with the MAS (Mawson 2002). On face value, these indicators appear to be applicable to individual patients and sit well within the Bobath concept, however, although clinical standards of 'normal movement' were specifically addressed, they do not consider the quality or performance of the patients' movement and postural control.

Daley et al (1999), Wang et al (2002) and Ahmed et al (2003) have demonstrated the Stroke Rehabilitation Assessment of Movement Measure (STREAM) to be a psychometrically strong outcome measure for stroke, for use in research and clinical practice. The STREAM measures a mix of selective motor activity and function that may be appropriate for use in clinical practice. The scoring criterion although initially appearing to be complex assesses and scores depending on whether the movement is complete, normal or deviated. This outcome measure therefore recognises the necessity of measuring the quality of movement in clinical practice.

It is important to measure change in the patients' ability and performance of movement as a result of physiotherapy intervention. The measures of change that are available are, in general, function orientated and are not specifically related to neurophysiotherapy clinical practice, which is:

- analysis of movement and posture
- problem identification
- functional goal setting
- treatment planning
- 'hands on' facilitation of movement and postural activity

There is a need to support current subjective observation of our patients' ability pre and post treatment in order to validate physiotherapy intervention.

Because quality or performance of posture and movement is important, the understanding of what is meant by 'quality', and what components of this are needed in order to achieve a successful performance, is essential.

The purpose of this study was to establish:

- what Bobath trained therapists mean by 'quality of movement and posture',
- the parameters of quality that are referred to in clinical practice and
- the potential to develop a measurement tool that could quantify these qualitative observations.

METHODOLOGY

The senior neuro training group within Leeds Teaching Hospitals NHS Trust Physiotherapy Department worked together as a consensus group, facilitated by one of the clinical specialists. The membership of the group is diverse in terms of specialist knowledge, representing a broad clinical spectrum within neurology (acute neurosurgery, acute neurorehabilitation, stroke unit, community stroke rehabilitation, community neurorehabilitation unit, neuro out-patients and MS specialist service). Its membership consists of ten experienced clinicians, with a range of between four and twenty five years experience of working at band seven levels or above in neurological rehabilitation. A series of consensus group meetings and Delphi type methodology was used to develop 'The LEEDS Movement Performance Index' (*Figure 1*).

RESULTS

During their first meeting in July 2006, the consensus group identified and agreed two definitions of what 'quality of movement and posture' meant to them. They then identified different components of quality of movement and agreed on five key components.

A Delphi type methodology was used within the group, in order for individuals to anonymously define and describe the five key components of quality of movement and posture.

In November 2006, the consensus group met again. A simple scoring system based on what the patients 'theoretical optimum normal' should be was agreed, and the resulting measure was named 'The LEEDS Movement Performance Index' (LEEDS MPI).

Each group member was randomly allocated two items of the index and used it during their routine physiotherapy record keeping process for two months. There were no constraints placed on how or when the measure should be used, only that it should be at the clinical judgment of each group member. During this trial period, the groups' facilitator visited each of the group in their clinical setting and gathered information and knowledge about how clinically useful the performance index was in practice.

A consensus group meeting in March 2007 resulted in the decision to trial and use all five items in clinical practice. This was done during June and July 2007.

DISCUSSION

During their year of research, the consensus group developed a measure that could support their qualitative analysis of selective components of movement and posture during the assessment which underpinned the functional goal setting and treatment of their patients. There were no floor or ceiling effects as the index could be used to

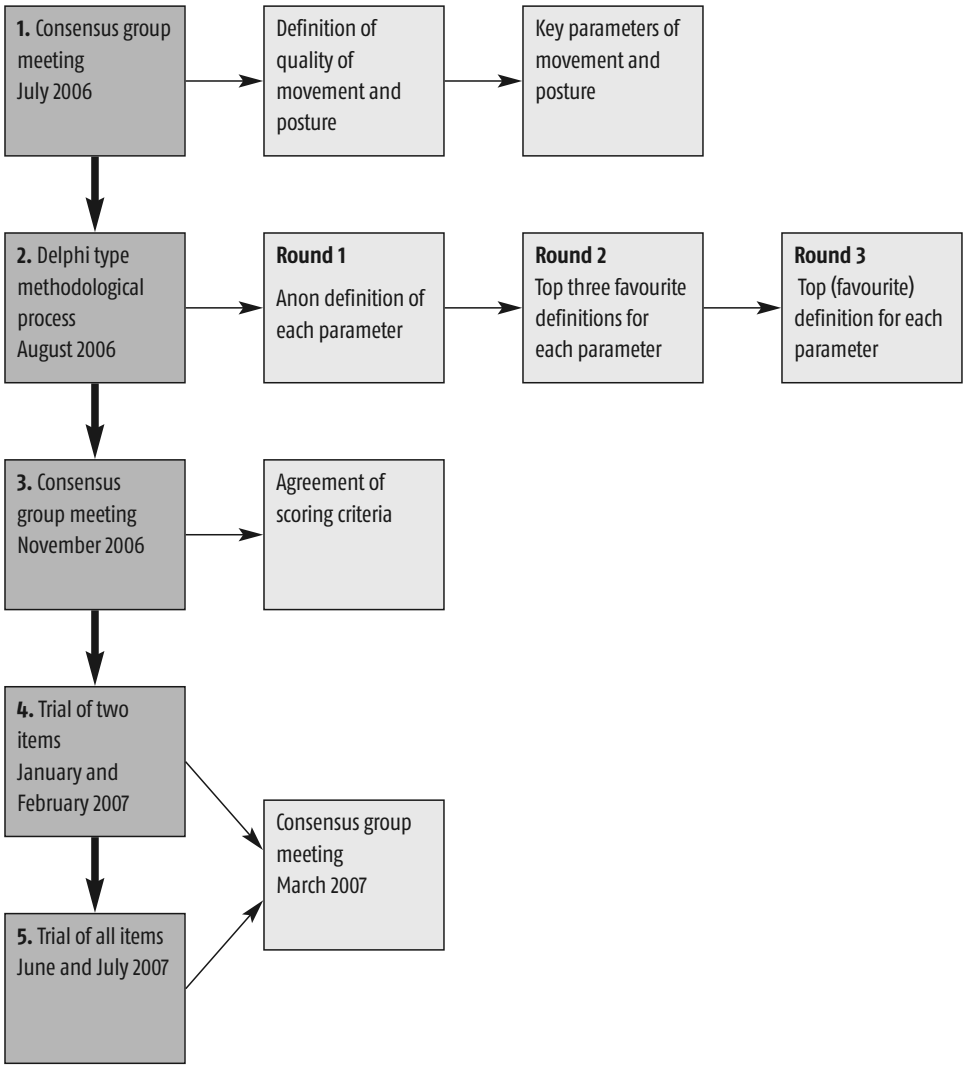

Figure 1 ***Research process***

analyse a part of, or the whole of, a pattern of movement. It was unanimously agreed that the index was supportive of the clinical reasoning process, and was closely related to patients' treatment goals and treatment plan.

During consensus group meetings it was recognised that the LEEDS MPI could also be developed for use as a tool to support the development of less experienced physiotherapists.

The group has developed a measure of intervention of treatment of neurologically impaired adults, based on a sound research structure, thus achieving robust face and content validity.

The consensus group recognizes that there may be an element of bias within this study, as all group members are very specifically Bobath trained and work at specialist level. The LEEDS MPI could be observed to be very technical, in terms of ease of use and language by non-Bobath trained therapists. It would also be impossible to use the index for comparison between groups of patients due to the variety and individualized nature of physiotherapy treatment goals and plans.

FUTURE WORK AND DISSEMINATION

It is intended by the researcher and the consensus group participants, that the LEEDS MPI be further developed, in order to:

- explore reliability during use by senior Bobath trained therapists,
- explore the validity for use by senior Bobath trained therapists, as an objective tool to measure intervention,
- support the more subjective descriptions currently used during the documentation of neurological therapy clinical practice and
- explore the development of use as a training aid for less experienced therapists or therapy students.

It is intended that dissemination of the work will be via presentation and publication, in order to gain peer review and feedback.

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Improving the postural orientation

of distal reference points will improve postural control for functional reach

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This study aims to investigate whether improving the postural orientation of distal reference points, that is, the hands and feet, influences postural control in a patient following an acute stroke. Postural control will be explored, with particular attention being paid to postural orientation, body schema and somatosensory information from hands and feet. A case study design will be used to investigate this topic in relation to the functional task of reaching and the Bobath concept.

LITERATURE REVIEW OF EVIDENCE BASE

Postural control

Postural control (PC) is defined by Shumway-Cook and Woollacott (2007) as the ability to control body position in space for the dual purpose of 'stability' and 'orientation'. 'Postural orientation' maintains alignment between body and segments, between body and environment and involves establishing a vertical orientation. Postural Control (PC) requires information and integration between the systems responsible for visual, vestibular and somatosensory input and motor output (Lackner and DiZio 2005).

Hands and feet: postural orientation

The hands and feet have a vast number of receptors and have the largest representation in the sensory cortex, (Hsiao et al 2002). Their role in postural orientation seems to be of particular importance and will be the focus of this study. Several studies reviewed: Maravita et al (2003); Jeka (1997); Kavounoudias et al (2002; 2001; 1998) and Lackner and DiZio (2005) were in agreement that touch and pressure information, particularly from hand and foot in contact with a stable surface, will influence apparent body orientation and therefore postural control.

Neuroplasticity and therapy aims

The current theoretical assumptions underpinning the Bobath concept state 'the therapist is aiming to re-educate the patient's own internal referencing system, to provide accurate afferent input to give the patient the best opportunity to be efficient, specific and have movement choices' (Raine 2007). Cortical representation areas (maps) can be modified by sensory input, experience and learning, as well as in response to injury (IBITA 2007).

Movement analysis: functional reach

Reaching involves transportation of the hand and arm in space. The ability to organise the body with respect to gravity and alignment of body segments around midline is important. A key aspect is creating an efficient and effective background of PC to free an upper limb for functional reach. The vestibulospinal tract and reticulospinal tracts are important in PC and antigravity muscle activation (IBITA 2007).

To accurately locate the target, co-ordination of eye and head movements and processing of visual and proprioceptive information is involved (Castiello 2005). Afferent input travels to the CNS via the ascending systems: the information is selectively received and incorporated into useful functional behaviour, ie selective movement of the arm for reach.

The descending system particularly linked to the spatial orientation of the upper limb and hand is the corticospinal tract and is responsible for single digit movement of the fingers (Lemon and Griffiths, 2005). The rubrospinal tract, thought to be less important in humans, is believed to have a role in opening and re-shaping of the hand for reach and grasp (Canedo 1997).

Hypothesis

From the literature there appears to be evidence to support that PC is influenced by postural orien-

tation of hands or feet (Maravita et al 2003; Jeka 1997; Kavounoudias et al (2002; 2001; 1998); Lackner and DiZio 2005). Fewer studies were available on people with lesions of the CNS or where randomised control groups were used. Despite the links between the distal reference points, no study was found where both hands and feet were investigated together. I therefore feel this warrants further investigation and the following hypothesis was generated for this study '***improving the postural orientation of distal reference points will improve postural control for functional reach***'.

CLINICAL CASE ANALYSIS AND REASONING

Patient A is an 86 year-old male, admitted to hospital, with sudden onset right (R) sided weakness and severe dysphasia. A CT head scan diagnosed a large left (L) MCA infarct.

Initial physiotherapy assessment was completed on his second day post stroke, where he presented with reduced activity in (R) upper limb (UL) and lower limb (LL), but was able to actively move limbs against gravity. UL was more affected than LL. He displayed poor postural orientation around midline, which became increasingly apparent when the task became more challenging, such as standing, where he showed signs of over-activity through the (L) side. Initial assessment findings guided development of the problem list (*Table 1*) and negotiation of patient centred short-term goals (*Table 2*).

Impairment	
1	Reduced activation and selective movement throughout (R) UL, particularly at hand (able to move against gravity proximally, flickers in fingers and thumb).
2	Reduced activation and selective movement throughout (R) LL (able to move against gravity throughout).
3	Inattention to (R) side, decreased orientation to (R) side.
4	Poor interaction of (R) and (L) foot with supporting surface.
5	Reduced segmental trunk control, reduced activation of core stability muscles, particularly abdominals and poor eccentric lengthening of trunk extensors.
6	Reduced head righting and balance reactions.
7	Poor alignment and interaction of thorax and pelvis, difficulty translating COM anteriorly over BOS.
8	Increased weight bearing with decreased control through (R) buttock.
9	Lateral weight 'shift', poor weight 'transfer' to (R) or (L).
10	Severe expressive dysphasia, no verbal communication, demonstrates appropriate use of head gestures. Communication barrier limits ability to perform certain detailed assessments, such as, sensation.
Compensations/ over activity	
1	Over activity of trunk extensors, fixating with whole trunk.
2	Over activity and fixing with bilateral hip adductors and hip flexors. Reduced dissociation between (R) and (L) LL.
3	Over activity with (L) side towards (R) side, decreased acceptance of BOS (L) side.
4	Use of (L) hip flexor strategy.
Activities	
1	Dependent on 2 to move in bed and get in/out of bed.
2	Dependent on 2 to crouch transfer to (L) side.
3	Dependent on 2 to stand.
4	Unable to mobilise.
5	Unable to use (R) UL for function.
6	Dependent on 1–2 for all PADL's and ADL's.
Participation	
1	Unable to return home at present to previous role living independently with wife.
2	Unable to return to hobby as a jazz singer.

Table 1 ***Problem list***

TREATMENT HYPOTHESES

Three treatment hypotheses were generated specific to the individual. The clinical reasoning process, interventions and how treatment evolved is described and related to the main hypothesis for this project.

1. By creating acceptance of BOS and orientation around midline in sitting PC will increase.

In sitting on plinth, worked on realignment and postural orientation around midline. Hands were placed into a more functional and symmetrical position. Orientation to feet, their alignment and interaction with floor, was increased. An improved supply of afferent information was therefore provided, to develop a more accurate internal referencing system, for greater postural orientation. A folded towel was placed under (R) buttock, which can be termed 'packing', to maintain better alignment, more equal weight distribution, increase sensory input and improve acceptance of BOS.

Treatment progressed to develop inter-segmental trunk control through facilitation from thorax and pelvis, working on control of anterior/posterior and lateral pelvic tilt. Improving position, mobility and stability of pelvis developed the ability to 'weight transfer' and greater interplay between (R) and (L). Creating alignment of thorax on pelvis improved inter-segmental trunk control promoting selective extension/symmetrical

Short-term (two weeks) functional goals		Achievements following two weeks therapy intervention	
1	To improve postural orientation and control in sitting to be able to free upper limbs for reaching activities.	1	Able to sit unsupported and perform reaching tasks moving within and out of BOS (compare *Figures 1* to *4*).
2	To be able to transfer, i.e. move to and from lying to sitting, get to and from bed to chair, independently.	2	Able to move to and from lying to sitting independently. Able to perform a low level crouch transfer towards (R) or (L) with assistance of 1.
3	To be able to maintain postural control in standing and perform reaching tasks.	3	Able to stand independently and reach for an object from high table in front (compare *Figures 8* and *9*).

Table 2 ***Short term goals and achievements***

activity. The patient responded well to incorporating functional reaching tasks during facilitation of lateral tilt. *Figures 1* to *4* show progression of treatment.

2. By providing somatosensory input through (R) hand & foot, will increase orientation to (R) side and develop internal representation/body schema and influence PC.

Specific sensory stimulation, with focus on areas with highest density of receptors, thenar and hyperthenar eminence and fingertips, was provided to (R) hand, and facilitation of single digit and thumb active movement, promoting activation of the corticospinal tract. In order for the ascending systems to provide accurate information relating to the patients body schema, alignment of soft tissues and joints was required (Raine 2007). Handling, touch, joint compression, alignment, movement, vision and attention to (R) hand and foot provided afferent information to CNS about body position in space to improve postural orientation and activate the descending tracts for PC (IBITA 2007).

The underpinning knowledge was applied when using various different facilitation techniques from the distal reference points. Two of the techniques used are described in *Figures 5* and *6* overleaf.

Throughout the ten treatment sessions particular attention was paid to the distal reference points. Improvements were demonstrated through clinical observation and use of outcome measures. Pre and post treatment photos of static sitting alignment were also used but are not included for the purpose of this report.

Physiotherapy session – day 2

Figure 1

Weight 'shift'/ fall to (R). Increased weight bearing through (R) pelvis. Reduced PC through (R) side. Poor head righting and visual orientation.

Figure 2

Resistance of weight transfer (L). Reduced acceptance of BOS through (L) pelvis. Over-active through (L) side.

Physiotherapy session – beginning of week 2

Figure 3

Improved weight transfer (R). Better visual and head orientation, & attention on task, improving PC. Placement of (R) UL on table for reference point of stability and orientation.

Figure 4

Sensory input to (R) hand improves contralateral stability, improving ability to weight transfer (L) during reach.

3. By creating efficient and effective PC through (R) will free (L) UL for functional reach.

Treatment evolved up into standing. Standing increases somatosensory input (foot to floor contact) providing information regarding postural orientation, influencing PC (Kavounoudias et al 2001). Vestibulospinal system and reticulospinal system are stimulated by activities against gravity, increasing PC and developing anti-gravity muscle activation/ strengthening of (R) LL (IBITA 2007). Careful observation skills were used to guide treatment progression. Signs of over activity through (L) indicated when the task was over challenging for the patient. *Figures 8* and *9* overleaf demonstrate the improvements made over two weeks.

Figure 5 ***Creating an active hand for reaching, facilitation of pronation/ supination***

Ulna border of hand is important for stability. Therefore contact with supporting surface was maintained. Therapists (L) hand provided stability down through olecranon and forward into wrist. Therapists (R) hand maintained wrist alignment and provided distraction at hand to lengthen flexor retinaculam. The patient was encouraged to actively participate during the movements. Timing of handling within and between therapists hands was important to facilitate muscle activation.

Figure 6 ***Facilitation of 'weight over foot' in standing to gain better postural orientation***

(R) hand shown over talus, maintained alignment, increased sensory awareness and provided compression through the joint, stimulating the vestibulospinal tract and activating anti-gravity muscles particularly soleus, which is important for PC (IBITA 2007). (L) hand stabilised around lateral gastrocnemius and head of fibula with thumb to facilitate forward translation of knee over foot/big toe. Towel was used under heel to maintain alignment at pelvis and help activate lateral pelvic tilt. UL's were actively placed on a high table in front to improve postural orientation.

Figure 8 ***Functional reach in standing week 1***

Under-active (R) trunk, increased side flexion (R), increased skin creases (R) trunk. Reduced proximal stability at (R) shoulder and pelvis. Over-activity through (L) UL. Dependence on (L) UL and unable to free UL for functional reach, loss of contra-lateral stability through (R).

Figure 9 ***Functional reach in standing end of week 2***

Improved PC throughout trunk. Placement of (R) hand improved postural orientation and provided a reference point of stability. Improved trunk alignment and selective extension. More equal skin creases bilaterally. Improved pelvic alignment and control. Able to reach independently and maintain contra-lateral stability through (R).

Figure 7 ***Pre-treatment foot alignment in sitting.***

Considerations made regarding 'task' of reaching included:

- Adapting the 'environment' for each task/intervention to; decrease fear, increase safety, give reference point for stability and influence postural orientation.
- Linking tasks to patient's interests, eg cup of tea (patient's favourite drink) to increase motivation, attention and arousal, stimulating limbic system (Holubar & Rice 2006; Lackner & Hummelsheim 2003).
- Opportunities for active learning of new skills, stimulating inferior olive (IBITA 2007).
- Providing variation and feedback, to promote 'generalization' of learning (Carey & Matyas 2005).
- 24 hour management of the patient was fundamental to reinforce the improved change in the body schema (IBITA 2007).

RESULTS

To improve reliability of this study, variables were standardised where possible, that is, plinth and table height, distance of object on table, same object used.

Following a review of the literature the outcome measures below were selected as seemed most suitable for the patient and their reliability/ validity is supported by evidence.

Outcome measures used

Photographs Pre and post treatment photographs illustrated changes in postural orientation and alignment statically (sitting) and dynamically

(standing and reaching). Improvements can be seen in previous section and *Appendix A*.

Postural Assessment Scale for Stroke (PASS) (Benaim et al, 1999). PASS was selected to measure the ability to maintain a given posture and ability to ensure equilibrium in changing position. Research suggests it is one of the most valid, reliable and responsive measures of postural control in stroke (Benaim et al 1999; Mao et al 2002).

Goal Attainment Scale (GAS) GAS provided an individualised measurement approach whereby a range of criterion referenced goals using a five-point ordinal scale (see *Table 3*) were specified for the patient (Hill & Denisenko, 2005). A goal that was both realistic and meaningful for the patient was identified and represents the target goal, point (0) on the GAS. The patient's level prior to intervention is rated (-2). A score (-1) represents improvement that is less than the expected level of attainment. (+1) and (+2) represent goals that exceed target goal expectations, often representing a long-term goal for the patient. See *Table 4* for GAS devised for patient A in sitting and standing.

GAS: Sitting	
–2	Able to reach a cup from a central position on table, 10" from edge with less-affected UL and maintain PC with assistance of 1 person.
–1	As above but independently.
0	As above but reach a cup from a central position on table, greater than 10" away from edge.
+1	As above but reach a cup from lateral position to (L) side.
+2	As above but reach a cup from lateral position to (R) side.

Table 3 The scale was repeated in standing with the same range of criterion referenced goals.

Timescale	PASS score	GAS score sitting	GAS score standing
Beginning of week 1	10	–2	–2
End of week 1	16	+1	–1
End of week 2	23	+2	0

Table 4 ***PASS and GAS scores pre, during and post intervention***

DISCUSSION

This study suggests that through improving the postural orientation of hands and feet during intervention, postural orientation may also be improved. This may create a better internal referencing system for more efficient PC, an essential requirement for the functional task of reaching.

Patient A, seemed to have reduced neural drive affecting more the vestibulospinal tract, with difficulty orientating his body in space, and medial reticulospinal tract, with reduced control more proximally and around trunk. The loss of activity in (R) hand also suggests reduced drive in corticospinal tract. Directing facilitation through the distal reference points and applying the Bobath concept, proved particularly effective for this patients recovery. He showed significant development in ability to reach in sitting over the two weeks, which carried over to improvements in ability to stand and reach independently, demonstrated visually in photographs, and improvements in PASS & GAS scores. The patient progressed to standing with support from one hand but could not progress further in this time period, illustrated in the PASS score, and in support with previous studies that placement of one hand influences postural orientation and improves PC (Lackner and DiZio, 2005; Jeka, 1997).

Large improvements in PASS scores were found in just two weeks, which could indicate the ceiling is reached too quickly for this outcome measure. The GAS does not appear to be widely used but seemed to be very easy, clear and patient specific. Its use therefore warrants further research.

This study supports the application of the Bobath concept and the current evidence available, particularly the studies described earlier by Kavoundias et al (2002; 2001; 1998) with regards to the 'foot' and the work reviewed by Maravita et al (2003) and Jeka (1997) regarding the 'hand'. The experimental design studies by Kavounoudias et al (2002; 2001; 1998), suggesting that cutaneous afferents from human plantar sole and ankle proprioceptive information, contribute to the coding and the spatial representation of body posture, can be further supported by this case study. Whilst acknowledging that it is an isolated case study, it could have implications to clinical practice to support that somatosensory inputs from the foot and hand can be influenced during therapy to improve postural orientation and control.

CONCLUSION

On completion of this study and learning more about the Bobath concept my personal physiotherapy practice has changed. Particularly in that I have a greater awareness of the importance of careful preparation work, and how through handling or environmental factors I can influence somatosensory information the patient receives, important for postural orientation and control.

A limitation of this study is that it is not possible

to attribute improvements found in the patient to facilitation through distal reference points, because treatment sessions evolved incorporating multiple influencing factors, including, different postural sets, techniques, environmental factors and tasks.

Greenhalgh (1997) reported that case studies are useful in research as a great deal of detailed information can be conveyed that would be lost in a clinical trial or survey. However, more randomized control trials on larger groups are needed to develop stronger evidence based practice. To conclude therefore the hypothesis could neither be proved nor disproved. Recommendations for further investigation are indicated with greater controls to help, if possible, to attribute improvement more to a particular variable, ie the specific influence of distal reference points.

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Appendix A Sitting patient A pre and post treatment

Anterior view pre treatment

(R) hip laterally rotated, poor interaction with (R) foot and floor. Poor organisation within (R) LL and decreased connection of LL to trunk. (L) LL more posterior and over active. No interaction of hands with supporting surface. Reduced proximal stability around (R) shoulder girdle (more anterior, slightly depressed and medially rotated).

Anterior view post treatment

Greater acceptance with supporting surfaces of buttocks, feet and hands. (R) LL displays greater organisation and interaction with trunk. Feet aligned and interacting with floor. Placement of hands improved postural orientation around midline. Over activity dampened down in (L). Proximal stability around (R) shoulder girdle remains reduced.

Anterior view pre treatment

Body weight posterior, poor alignment of thorax more posterior on pelvis. Poor segmental trunk control, 'flat back' loss of anterior pelvic tilt. Head forward protracted.

Anterior view post treatment

Improved translation of body weight anterior over pelvis (COM over BOS).

Outcome measurement

by physiotherapists who work in neurology

LS Yoward*, P Doherty, C Boyes

Measuring the outcome of intervention is a core standard of physiotherapy practice (CSP 2005) and there are many outcome measurement scales and tools available for use by physiotherapists. This study is a preliminary part of a PhD and was initially planned to explore what outcome measures are being used for walking, gait and balance by physiotherapists who work with patients with neurological problems. The results of this have been reported elsewhere (Yoward et al 2007).

The importance placed on outcome measurement by physiotherapists is unclear and it is unknown if there are specific factors that influence a physiotherapist in outcome measurement use or if they are used simply to fulfil guidelines and standards. Some studies have attempted to discover some of these issues in rehabilitation and/or therapy (Chesson et al 1996; Turner-Stokes and Turner-Stokes 1997; Maher and Williams 2005; Abrams et al 2006) but, to the authors' knowledge, there has been no literature on the influences and factors for physiotherapists specifically working in neurology.

METHOD

A survey of members of a randomly selected sample of ACPIN branches took place during 2005 using a questionnaire. The procedure for developing the questionnaire has been explained elsewhere (Yoward et al 2007) but, in brief, the questionnaire comprised three parts whereby respondents completed sections according to previous responses for using outcome measures with patients. This report is based on the final section of the questionnaire where participants were asked to respond to the statement: 'I am influenced in my choice of measure by…'. A list was provided of possible influences including equipment and time available; the environment; using the same measure as colleagues; patient diagnosis, compliance, cognitive state and goals; reliability, validity and sensitivity of the test; who will see the data; and training/confidence in using the measure. A space was available for respondents to insert their own suggestions and the possible options for level of influence were 'very', 'partly' or 'not at all'

Participants were also asked to rate a range of statements with options presented in five point Likert-style (strongly agree, agree, neither agree nor disagree, disagree and strongly disagree). The statements are shown below in the results section.

347 questionnaires were sent to the sample with follow up reminder letters and repeat questionnaires sent to those who had not responded by the allotted time. The results were analysed using SPSS version 14.

Ethical approval was granted by York St John College (now York St John University) and consent was assumed from return of completed questionnaires. All questionnaires were anonymous.

RESULTS

269 questionnaires were returned completed, a response rate of 78%. The results reported here are from section three of the questionnaire. Not all respondents were expected to complete these questions depending on answers supplied from parts 1 and 2. Therefore, results presented are from those who answered the relevant questions rather than from the whole sample.

Influences

Figure 1 shows the level of influence in choice of measure.

Rating statements

Table 1 below shows the rating of statements, related to outcome measurement, by percentage of respondents who answered the question.

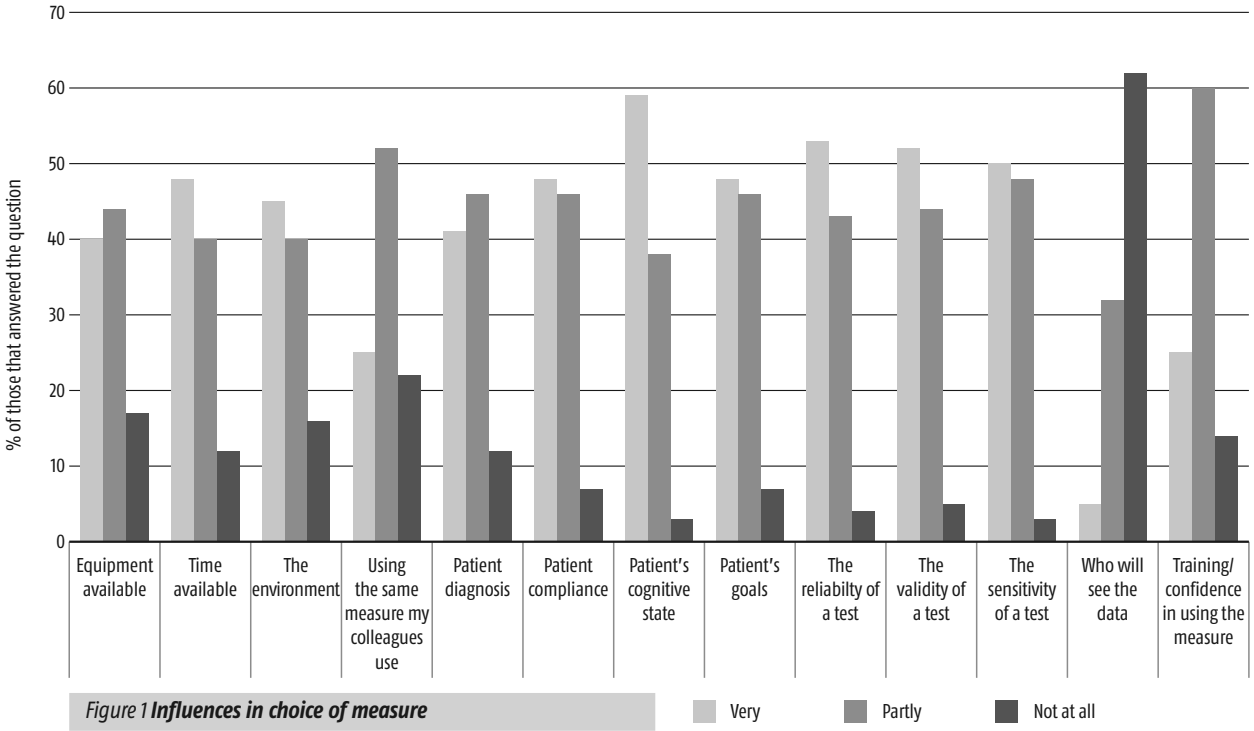

Figure 1 ***Influences in choice of measure***

Figures in parentheses indicate actual number
Total percentages differ from 100% due to rounding

Statement	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
The reliability of a test is important to me	36.6 (87)	60.5 (144)	2.9 (7)	0	0
The validity of a test is important to me	37.8 (90)	58.4 (139)	3.8 (9)	0	0
Consistency in using a measure is important	46.6 (111)	51.3 (122)	1.7 (4)	0.4 (1)	0
Measurement should be routinely carried out during assessment	33.9 (80)	47.5 (112)	11.4 (27)	7.2 (17)	0
It is a physiotherapist's duty to measure outcome of intervention	43.2 (102)	50.0 (118)	4.7 (11)	2.1 (5)	0
I show the results of measurement to the patient concerned	23.2 (55)	51.9 (123)	23.2 (55)	1.7 (4)	0
I use the results of measurement to evaluate my own performance	9.2 (22)	47.1 (112)	25.6 (61)	18.1 (43)	0
My manager/team leader asks for the results of measure(s)*	3.0 (7)	10.4 (24)	26.5 (61)	44.3 (102)	15.7 (36)
I always analyse the data collected*	5.5 (13)	40.8 (97)	28.2 (67)	23.1 (55)	2.5 (6)
I feel confident in using the measure(s) I use	14.3 (34)	77.3 (184)	6.7 (16)	1.7 (4)	0
I only use outcome measurement to fulfil the requirements of guidelines and policy	1.7 (4)	7.6 (18)	17.6 (42)	55.0 (131)	18.1 (43)
I would prefer to use a different measure(s) to the one(s) I do use	2.6 (6)	15.1 (35)	51.3 (119)	30.6 (71)	0.4 (1)

Table 1

DISCUSSION

The results overall suggest that the vast majority of respondents are committed to outcome measurement. Most consider that measurements should be routinely taken during assessment (81.4% who agreed or strongly agreed) and that it is the duty of the physiotherapist to measure outcome of intervention (93.2%). Only a small percentage of respondents (less than 10%) were measuring outcome solely for the purposes of fulfilling guidelines and policies. This is reassuring as it is a core standard (CSP 2005) that all physiotherapists should measure outcome and this sample of physiotherapists are reporting adherence to the standard. This is perhaps a different picture to that of a decade ago when the results of

an outcome measures project for ACPIN members suggested that few therapists were routinely using standardised scales (Hitchcock 1997). The relevant core standard is explicit in that the measure used should be valid and reliable (CSP 2005). The majority of respondents rate these aspects of the measures used as important considerations suggesting an understanding of the psychometric requirements of tests and scales used.

Although the majority of respondents felt confident with the measures that they were using, there was a mixed response to whether an alternative measure would be preferred. Results also suggested that approximately three quarters of respondents were very or partly influenced in their choice of measure by the one/s that their colleagues use. It may be that departments have a battery of tests/scales that are used with patients and that all physiotherapists working in the department adhere to using the same tests. Standardisation of outcome measure use can be beneficial in that the health status of patients following intervention can be more easily compared (Hammond 2000). However, there may need to be scope for alternative measures to be used if a clinician becomes aware of a more appropriate measure or assistance given to a clinician if they lack training or confidence in the measure being used by the team. These results show that a high percentage of respondents were influenced in their choice of measure by the training/confidence in using the measure.

A high percentage of respondents were very influenced by aspects of the patient in the choice of measure for example, the patient's cognition, goals and compliance. This is to be expected in client centred care. Approximately three quarters of the respondents show the results to the patient concerned. This again supports client centred care and inclusivity. Presumably the figure is not higher still as showing the results to the patient will depend on their ability, emotional and cognitive state and consciousness, all of which could be variable for patients with neurological problems.

Surprisingly, less than half were very influenced in their choice of measure by the time available although a significant majority (87.6%) were influenced to some extent (very or partly) by the time available. This corresponds closely with results from a survey of physiotherapists working with patients who have had a lung transplant where 83% stated that their outcome measurement use was limited by the lack of time (Maher and Williams 2005). Clinicians may be selective about how often the measure is used if it is lengthy but suitable for purpose; this aspect would benefit from further investigation.

The environment also influenced choice of measure for many of the respondents. This may be because of environmental constraints. For example, when working in a patient's home, space may limit the type of test that can be administered (21% of all respondents worked in a community setting with neurological patients and 12% worked in a general community setting; these are not necessarily a different group of people as some listed more than one place of work). The outcome measure used by most respondents to the questionnaire was the ten metre walk test which clearly demands a significant amount of space. The environment would have an impact on being able to use this test particularly in a patient's home. However, it has been shown to be acceptable if performed as a five metre walk with a turn and five metre return (van Herk et al 1998). Equipment may be a factor in choice of measure, with most respondents being very or partly influenced. This could be linked to the environment in that some means of measuring require specific equipment. It would be impractical for those working in some environments to be able to use certain measures, for example if working in a patient's home, the use of force plate data would be impossible. Financial considerations may also influence the equipment that is available irrespective of the environment and lack of confidence or training in the equipment that is available could limit its use.

The majority of respondents were not influenced at all by who would see the data. No attempt was made to clarify in the questionnaire if different individuals seeing the data collected may cause a difference in the level of influence, for example if the respondent would feel differently were a patient, colleague or manager seeing the results. The results from the rating scales suggest that it is generally not managers who ask to see the results so presumably the response is mostly directed towards not being influenced by colleagues or patients seeing the results of measurement. Although it seems that managers do not routinely ask to see the data collected, suggesting that the results do not form part of appraisal, the majority of respondents use the data to evaluate their own performance. It is unclear how the data is used to evaluate own performance as 56% agreed or strongly agreed with this statement yet only 46% agreed or strongly agreed that they always analysed the data collected. Without analysis of the data, the use of it for evaluation purposes may not be objective. The results for analysing the data is a little lower than that found amongst a sample of professionals (the majority of respondents were doctors) who work in rehabilitation centres where

57% reported collating and analysing the data collected (Turner-Stokes and Turner-Stokes 1997). The use of data, once collected, warrants further investigation.

The respondents are those who are members of a special interest group and in being so are presumably interested in their work and specialty. In addition, those that were contacted for the survey are only those who have given their permission to ACPIN to be contacted for the purposes of research and are therefore willing to share their practice. This may have positively influenced the results achieved if compared to a general sample of physiotherapists. In addition, questionnaires lend themselves to data of reported rather than actual behaviour (Abrams et al 2006) potentially leading to overly positive results.

CONCLUSION

ACPIN members surveyed by questionnaire believe that it is their duty to measure the outcome of intervention and they are influenced in their choice of measure by many factors including patient issues, time available and psychometric properties of the measures. It would be useful to investigate further the destiny of the data that is collected and the means by which outcome measurement could be used for evaluation of performance.

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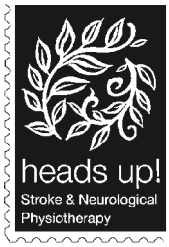

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FOCUS ON...

Listen to our voices

telling our stories to physiotherapists

World confederation for Physical Therapy International Congress

Carolyn Carter stroke survivor

I would like to share with you some of my experiences with physiotherapy since my stroke in 2001. I was in England at the time, and spent seven months in hospital and rehabilitation.

After the acute phase, once I got into a good rehab centre, physiotherapists became among the most important people in my life for a while.

There are two early experiences I'd like to tell you about, concerning what it felt like losing the sensations and movement of one half of my body. The first sounds comical when I tell it, but was very perplexing at the time. I remember waking up in a hospital bed and finding a body part which seemed to have nothing to do with me, in my bed! I had found somebody's breast! It could not be mine as I could only feel it with my good hand – I reasoned that if it had been part of my own body, surely I would have known that I was touching it? That was the beginning of knowing that I could no longer trust the sensory input from the left side of my body to my brain.

The second incident that stays with me is that of the 'phantom hand': some time later I had been put in a chair at a table. An object rolled off the table and my left hand shot out reflexively to catch it… or so I thought. I felt it, and was sure that my hand went out… and the object fell right through it! That was amazing because, not only did I feel my hand go out, but I was pretty sure I'd seen it too. However, on looking down, and feeling for it with my right hand for confirmation, I found my left hand lying inert in my lap. So no magic; my brain had tricked me again. This had been another indication that I would have to learn new ways of knowing what was going on with the left side of my body.

Around this time I had my first physiotherapy sessions. I remember being asked to move my left arm. I tried desperately and nothing happened. The same when I was asked to move my leg. It felt like I was looking down into the left side of my body into a hollow, empty darkness, searching for something to use to make it move. There was nothing inside it, no mechanisms to move my arm or leg with. My right side, in contrast, felt full of life.

So that was where I started on this interesting journey of life after stroke.

What were the things that helped?

Most of all the wonderful and constant support of my husband and family. Coming a close second has been the help I have received from a number of physiotherapists.

Though not so much to begin with. As I said, I was in England when I had my stroke and unfortunately for me my local hospital was one of two which had been rated as the worst hospitals in the country. There seemed to be a physiotherapy program I should slot into and a right and wrong to each exercise. My efforts never seemed to be satisfactory, however hard I tried. I seemed to disappoint my physiotherapists.

Then I was moved to a specialist rehab centre where the physiotherapy approach seemed to be very different and I heard for the first time, the term Bobath.

It was here I had my 'standing on no leg' experience: I remember being supported at ankle, knee, hip and torso as I was stacked up on my left leg, which once I couldn't see it, simply ceased to exist! It had no connection with my brain, so I couldn't know what it was doing without seeing it. This was very frightening – I felt a sense of vertigo as if I were up somewhere really high and dangerous. As I was helped to stand on my left leg and persuaded to lift up my right foot (I took a lot of persuading!) I remember feeling terrified but laughing aloud with astonishment, joy and amaze-

ment! This was a fantastic moment for me – I had experienced being upright and could really believe, that one day I would achieve it without a team of people supporting me. Only because I had developed a strong, trusting relationship with the team of physiotherapists was I able to overcome my fear enough to allow that breakthrough to happen.

Later, the same team of physiotherapists had a Bobath Instructor visiting and I was lucky enough to have her working with me for a session. I had the wonderful experience of 'walking' with the help of two people who seemed to be able to facilitate movements by initiating physical responses that reminded my body and brain how to do this walking thing again. I couldn't do it alone, but it gave me a feeling of what I could work towards. It gave me hope.

When asked what barriers I faced, there were a couple of encounters with medical professionals who earnestly felt obliged to give me a 'realistic prognosis' which did not give me hope of continuing improvement. Each time, this was very depressing and demoralizing for me.

Another barrier for me, is when physiotherapists communicate primarily through verbal instructions. I find my attention focused on language processing and not on being aware of sensory perception. I think this is why I have made greater progress when working with people whose communication has also been through their hands, directly to my body. Because this is where my attention should be: If I'm figuring out what the physiotherapist is telling me to do, and then worrying about whether I've got it right, I will not be paying attention to what is going on inside my own body and I won't remember the feel of that movement and what went before it.

In conclusion I would like to say that I feel very fortunate to have been treated by some great physiotherapists since I moved to Vancouver, BC: Cathy Eustace and Libby Swain, who are both Bobath Instructors.

Having made most progress with Bobath trained physiotherapists in England, I sought out someone here who would use a similar approach and I was very lucky to be put in touch with Cathy, who has treated me ever since, though I see her much less now. I have been very busy with volunteer work in the last couple of years and last year founded the Vancouver Younger Stroke Survivor peer support network.

Although the changes are slower now, six years on I am still aware of continued improvements in my physical abilities, and I still set myself targets. Currently I'm working on walking without my stick. Now, when I see Cathy it's with a focus on improving the way I am doing this.

NEWS ACPIN

ACPIN AGM 2008

Minutes
Opened at 12.30pm

1. **Present**
   Jackie Sharp, Jakko Brouwers, Louise Rogerson, Nicola Hancock, Julia Williamson, Emma Forbes, Sandy Chambers, Cherry Kilbride, Jo Tuckey, Ros Cax, Siobhan Mac Auley, Sue Mawson.
2. **Apologies**
   Anne Rodger, Jo Kileff, Louise Gilbert, Fiona Wallace, Jill Fisher, Helen Dawson, Caroline Graham, Jo Jones, Carol Carr, Janice Champion, Pam Thirlwell, Helen Dawson.
3. **Minutes of AGM 2007**
   Accepted as an accurate account – proposed Chris Manning, Seconded Jackie Sharp.
4. **President's address**
   Sue Mawson
5. **Chair's address**
   Nicola Hancock
6. **Treasurer's address**
   voting in of accountants for 2008/09 – voted in by majority
7. **Election of re-standing executiv committee members**
   • Siobhan MacAuley *Hon PRO* – voted in by majority
   • Jakko Brouwers *Diversity Officer* – voted in by majority
   • Louise Rogerson *Hon Minutes Secretary* – voted in by majority
8. **Election of new officers/ committee members**
   • Chris Manning *iCSP co-ordinator* – voted in by majority
   • Adine Adonis *committee member* – voted in by majority• Gita Ramdharry *committee member* – voted in by majority
9. **AOB**
   none

Meeting closed at 12.55pm

President's address

Sue Mawson MCSP BSc (Hons) PhD

The translational gap

I'm sure many of you have heard the words translational research, applied research that takes theoretical knowledge and tests it in a clinical environment. An example of translational research for us would be taking the experimental work undertaken in the field of sport science around knowledge of results and knowledge of performance into the therapeutic models for stroke rehabilitation. The experimental findings from normal subjects must be translated into clinical research with stroke subjects who do not have a normal CNS. Indeed, resent work by Winstein (2007) would suggest that learning paradigms attributed to normal motor learning may in fact be inappropriate for people who have had a stroke.

However, what does the term 'translational gap' mean and is there a conflict between NHS policy and current practice. The Cooksey review (2006) identified that whilst the UK is a leader in basic science research, there is a significant delay in taking the results from research activity into both new innovations and into changing health care practices. This 'second gap' described by Cooksey, in translating new ideas into clinical practice and new products into the care pathway must be a significant driver for clinical therapists in neurology as we seek to provide the best evidence based care to our patients and carers.

We know for example that targeted physiotherapy has been shown to promote recovery following brain injury (Pomeroy and Tallis, 2002). We also have evidence that repetitive shoulder movements performed soon after the stroke improve upper limb function (Fey et al 1998) and that reaching tasks in sitting has an effect on standing from sitting (Dean, 1997). It is my belief that in the world of neurological rehabilitation we have in fact translated scientific knowledge into changing practice. We as physiotherapy practitioners have, for a number of years, taken evidence from the 'bench to the bed side', 'lab to lounge' in my own area, phrases used to describe this Cooksey concept.

Since the early 1900s (Lawes, Musa and Kidd, 1994) we based our interventions on the theories of neuroplastic adaption however it wasn't until 2000 that a study was published demonstrating, for the first time, that physiotherapy post stroke could result in reorganisation within the CNS with enlargements of the motor cortex following stimulation (Liepert 2000). A further study in 2002 using fMRI showed clear signs of increased activity in the cortex after rehabilitation (Johansen et al 2002).

However, there is a major problem with this concept of translating evidence into practice because of a conflict within the current NHS with a financial model that dictates a balanced budget and payment by results. All Foundation Trusts now have major productivity and efficiency programmes with cost savings year on year that are having a huge impact on our ability to deliver evidence based practice. At our own ACPIN conference here in 2006 Kwakkle presented an extensive review of rehabilitation outcomes concluding that task orientation, intensity and frequency were the key factors for effective intervention. However in my own Foundation Trust, therapy frequency and intensity has been reduced over the past year from ten sessions a week to five on our stroke unit. We have therefore two conflicting drivers, the need to translate evidence into practice and the need to achieve a balanced budget for our Trust board. It is at times difficult to see how we can fight such cuts in our services when we have the evidence to back the need for more therapy.

Perhaps if we look at a new report of the High Level Group on Clinical Effectiveness published in October 2007 by Professor Sir John Tooke we may find a glimmer of hope for the future. This document clearly identifies the need to revisit the evidence based clinical effectiveness (EBCE) agenda. The report supports my view that the current policy climate emphasises aspect of trust performance other than those related to clinical effectiveness with resulting disincentives for senior mangers. There are a number of further issues identified not least the lack of investment in the agenda and the lack of critical appraisal skills amongst all clinicians.

Tooke makes two points that I have been raising in *Synapse* over the past three years. Firstly, that the NHS is a data poor organisation which lacks rigorous evaluations of clinical effectiveness and secondly, the issue of a 'paradigm war' where the debate about the credibility of evidence is challenged from a disciplinary perspective rather than a scientific one. In 2005, 2006 and 2007 I described and discussed the concept of evidence, the problem of using an evidence hierarchy and the conflict between statistical significance and clinical significance. I also presented to the reader the difference between central tendency theorists who aggregate outcome data to the group mean and the concept of variances where individual variations in response to interventions are analysed to provide more valuable data on which to base clinical and managerial decisions. In 2007 I suggested that perhaps the greatest value could be gained within the NHS if we undertook well designed service evaluations using tools such as the TELER method.

Whilst it is essential that we continue to undertake pragmatic applied research particularly in the areas of complex interventions and service delivery we must also undertake good evaluations of evidence based practice. Furthermore we must provide valid evidence of how reductions in service delivery are affecting the quality of care we are providing. We are not translating research evidence into practice on our stroke unit. We must use aggregated individual data on changes in physical, psychological and social well being to

provide evidence that these reductions are having a major impact on the quality of care we are providing.

The way to ensure that we undertake translational research and translate research findings into practice is through closer links with academia. Undergraduate and post graduate education is crucial if we are to change the way we provide, interpret and use evidence in the field of neurological rehabilitation. Senior clinicians must be given and take the opportunity to work in closer collaboration with university partners, as visiting lecturers, secondees, and curriculum advisers. On the one hand the academic institution may be world renounced for work on muscle architecture or kinematic analysis in a laboratory setting on the other clinicians have the experiential knowledge and serendipitous observations that become research questions that are clinically relevant to patients and carers. It is the clinician that translates the science into changed behaviour, do not underestimate your value but learn to harness your skills as expert practitioners in the fight to provide evidence of poor care that is resulting from reduced NHS resources for neurological rehabilitation.

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Chairs address

Nicola Hancock MCSP BSc (Hons)

As usual, the ACPIN year proceeded at great pace. Despite reviewing and changing their structure in order to reflect the goals of our organisation more fully, National and Executive committee meetings actually seemed the easy bit this year, as so many of us were involved in other projects and activities during the months between our meetings at the CSP. These contributions on your behalf are far too numerous to mention in full here, though I have included some to give you an idea of what we have been up to.

You will no doubt be aware of the launch of the National Stroke Strategy in December. Members of the committee were involved in peer review and in the PR for its launch, including articles in *Frontline* in both the consultation and publication stages. Consultation on the NICE acute stroke guidelines has just closed and Rhoda Allison has played a lead role for us in the process, supported by Cherry Kilbride and I continue to represent ACPIN on the RCP intercollegiate stroke working party, alongside Sheila Lennon and Chris Fitzpatrick, with new *National Stroke Guidelines* due this summer.

You are all aware, I am sure, of the new, online membership system and I hope have all now tapped in your details. This has been a huge change for ACPIN and it would be facile to even attempt to sum up the work put in by Jo Tuckey, who is about to become co-chair, and Mary Crampyes, that's the same Mary Cramp who resigned a year ago! Genuine thanks are due to them both and to all of you, for your patience with the new system.

Our reputation for excellent professional events continues, and we are a key group involved in Congress in Manchester later this year – Siobhan MacAuley has facilitated a truly fantastic programme for the neurology strand, and I am sure you are all aware of Anne Shumway Cook as a key note speaker, amongst many others. Thanks are also due to Siobhan for this excellent work.

I suppose that leads neatly into the inevitable, but none the less essential part of my address, that of thanking those not already mentioned.

Nicola Hancock (centre) the outgoing Chair with the two new co-Chairs, Cherry Kilbride(left) and Jo Tuckey.

Sue Mawson, our President, remains a constant source of inspiration and support, and I am sure you will all join me in congratulating her on her recent appointment to Chair of Rehabilitation at Sheffield – so here's to the Prof!

Thanks to all members supporting ACPIN on other groups include Ann Ashburn at the UK Stroke Forum, Rhoda Allison on the NICE working party, Jill Fisher who represented us on the Manual Handling group at the CSP, and Chris Manning and all the moderators for their roles with iCSP.

Louise Dunthorne continues to do an inspired job in producing *Synapse*, thank you Louise from us all.

The regional reps continue to provide a hub for contact from and to the regions via the national committee so thanks to them all for their service this year.

It is time to say goodbye to some very long serving Executive Committee members. Jackie Sharp leaves us after ten years of service, and we are also very sad to be losing Ros Cox, Emma Forbes, and Louise Gilbert. It is impossible to quantify their roles but we do have some small gifts to represent how grateful we are and how much we will miss them.

This means, that as I also depart, the committee really does have something of a fresh start, and we will vote on our new members in a minute. I am really happy to be leaving things in the very safe and experienced hands of Jo Tuckey and Cherry Kilbride, who will take on the Chair's seat together and I wish them both the very best in their new roles.

And what of the future? Well, I think that we have a responsibility to engage further in the research process, particularly in initiating and driving forward work that is transferable and clinically relevant, acknowledging of course the terrific work already done and that which is underway. We must continue as an organisation to have a loud and powerful voice, as it is only from the vast clinical, educational and research expertise within the ACPIN community that change will happen in the direction we know it should: not only in terms of direct clinical practice, but in service commissioning and development, and investment in research and training. Whilst the erosion of neurorehabilitation services remains a reality, largely due to the short-term political agenda, there remain many opportunities for further development and investment and it is the duty of us all to ensure we refute the former and insist on the latter.

And for me personally, as I tender my resignation to the Executive, the long, ACPIN-free evenings loom! I have had a wonderful time in my ten years of involvement and have been truly honoured to serve as Chair since 2004. I wish you all my very best, and look forward to seeing you at next year's AGM, from my vantage point in the very back row!

Treasurer's report

Jackie Sharp

I will now present a summary of the financial accounts for National ACPIN for the year end 31st December 2007.

The total income (*Figure 1*) was £47,222, an decrease of £25,681. This was mainly due to a substantially reduced income from conferences. We only held the Spring Conference in March 2007 and charged the membership at discounted rates. We made a loss on this conference but felt it was a good opportunity to put some of the monies back into the membership.

	2006 £	**2007 £**
Course fees	35,937	**8,925**
Membership	32,687	**33,653**
Capitation	2,536	**2,698**
Synapse	420	**110**
Database	300	**117**
Bank interest	1,023	**1,659**
Total	72,903	**47,222**

Figure 1 ***Income***

Expenditure (*Figure 2*) for 2007 was down by £15,602 compared to 2006. This was primarily due to the decrease in CSP Conference expenditure. There were also a small decrease in the cost of producing and distributing *Synapse*, but increases in website expenses and administration

	2006 £	**2007 £**
Courses	28,053	**11,333**
Synapse	8,128	**7,454**
Travel	6,248	**7,182**
Administration	6,793	**7,163**
Capitation	5,288	**5,272**
Website	589	**1,561**
Research bursary	488	**0**
UK Stroke Forum/ Stroke guidelines	580	**306**
Accounts, bank sundry	1,543	**1,837**
Total	57,710	**42,108**

Figure 2 ***Expenditure***

costs due to revamping the membership process. There has also been a slight increase in travelling expenses.

The website has cost more to update this year due to a change in the way we are managing the site. Monthly updates have now started and this results in a yearly expenditure of £1,400. Courses are also advertised on the website which adds to the costs of maintaining the site.

Costs for 2007 continue to arise from the UK Stroke Forum. ACPIN have a representative on this forum and fund two committee members to attend the annual conference with a view to holding programmes at this event in future years.

2007	Income £	**Expenditure £**
March conference	8,925	**9,733**

Figure 3 ***Courses***

Figure 3 divides the course income and expenditure up for the conference that ACPIN held this year.

In 2006 the March two day residential conference, our silver jubilee, was projected to make a profit with full attendance but made an unexpectedly large profit. This was due to a number of reasons we could not anticipate. This money has been used to subsidise the conferences in 2007 and 2008 by keeping the delegate rates down.

	£
Reserves brought forward	**51,818**
Surplus/deficit	**5,053**
Reserves carried forward	**56,871**

Figure 4 ***Reserves***

The balance sheet (*Figure 4*) on the 31st December 2007 showed a profit of £5,053 and we were able to carry forward reserves of £56,871 into 2007.

Copies of accounts 2007

Full copies of the ACPIN accounts are available on request

Vote for accountants

Vote to retain the current accountants for 2008: Langers, 8–10 Gatley Road, Cheadle, Cheshire, SK8 1PY.

Delegate report

Sam Botting Physiotherapy Neuro Expert Lead Portsmouth City teaching Primary Care Trust

As a neurophysiotherapist with a special interest in acquired brain injury I was eager to attend this ACPIN conference, it promised a good range of presentations from acute medical management to community mild brain injury management.

There was a good representation of physiotherapists from across the UK and it was great to catch up with old friends and colleagues as well as to share ideas, developments and reflect upon changes within the provision of services across the country.

Over the two-day programme speakers provided information on up to date clinical practice, current research and addressed some of the challenges we face when dealing with this highly complex group of patients.

The lectures on day one reviewed the acute management of the patient with acquired brain injury.

Dr Martin Smith addressed the acute medical management of patients following traumatic brain injury on ITU, including current practice on the monitoring and treatment of patients with reference to the pathophysiology of primary and secondary brain trauma. This was nicely followed by an informative talk from Adrian Capp he covered the physiotherapy management of these patients. He highlighted the importance of active dynamic physiotherapy in the maintenance or pre-rehab acute phase to help prevent patients developing secondary complications.

The afternoon session began with Bernie Lyons demonstrating how much hard work goes into a Cochrane review and how specific research has to be to meet its strict criteria. She gave us positive evidence as to the effectiveness of botulinum toxin for the management of upper limb spastictiy.

The poster presentations followed giving us a snap shot of work that is being done across the UK, it was good to see the use of rehabilitation assistances in different contexts.

In the final afternoon lecture Dr Nigel Harris told us about a forward thinking and innovative development by the SMART rehabilitation consortium, they have been developing a new interactive assistive technology system for upper limb rehab, there was much enthusiasm about this especially when we saw it in action.

The second day addressed the rehab management of these patients. Dr Richard Greenwood highlighted the need for specific acute BI units/teams and addressed how effective management improves outcome, giving us some ammunition to go back to our commissioners with.

Jo Tuckey followed this giving us an overview through case presentations of how we might unstick the stuck patient. This was a very positive look at how we can make significant functional changes with patients who may initially appear unrehabable. Gina Sargeant went on to talk about those patients who present with challenging behaviours and gave us some really useful take home messages on dealing with these behaviours, early, proactively and with the IDT.

Nick Hedley then kept us alert before lunch with an insightful and entertaining account of his journey following a head injury.

In the final afternoon, Anne McSherry told us about her role in developing services for the management of mild brain injury which so many of us rarely see as they often get missed but may have significant debilitating problems and benefit from our input.

Finally Sue Mawson called us to research and encouraged us to register our interest in submitting a proposal for the NIHR Research Programmes specifically the 'Research for patients benefit'. Through her rousing presentation and skiing photos a number of people may have gone home to start writing their proposal.

Finally these two day offered a great opportunity to network find out whats new and best practise in the management of acquired brain injury and also to thank Nicola Hancock for all her hard work before she stepped down as chair. ■

Communications/Events

Emma Forbes and Jo Tuckey

The former sub groups joined together during the last meeting. The residential conference in March 2008 was briefly discussed and it was confirmed that 2 sponsors would be attending each day.

CSP congress 2008 was discussed but this is very capably being organised by Siobhan MacAuley and the discussion was indeed brief.

Most of the discussions involved the planning of the National ACPIN study day in March 2009. A loose working title and location was decided upon with members to suggest speakers in time for the next meeting. At time of printing we are investigating the option of the study day being hosted in Leeds and the title to involve the 'upper limb'. Details are scant at the moment with the plans to be given substance at the next meeting. ■

Feedback from EA region members

Anna Colbear and Nic Hills

East Anglia ACPIN recently sent out a questionnaire to their regional members to seek feedback on what members wanted to gain from their membership locally. Eighty questionnaires were sent out, either by post or email, according to expressed preference of the individuals. 23 responses were received, giving a response rate of 29%

Thank you to all the members who replied. We value your feedback and have compiled this summary of responses, which will shape our plans for the future programme.

Question 1 **What would you like out of East Anglia ACPIN?**

	%
Study days	21
Evening lectures	13
Weekend courses	9
Half study days	20
Networking meetings	15
Summary of national meetings	22

Committee comments: It is great to see that people are once again interested in study days, after a year of restricted study leave and funding, which meant that several courses had to be cancelled due to lack of applicants.

Question 2 **Would you be interested in summaries of national meetings?**

	%
Yes	96
No	4

Committee comments: Our Regional Rep (Nic Hills) is happy to compile a summary of the main relevant points from the national meetings, which are held three times a year. These can either be posted, or electronically sent to interested members.

Question 3 **Where would you travel to for a course?**

	%
Ipswich	17
Colchester	14
Norwich	16
Bury	20
Peterborough	12
Cambridge	21

Committee comments: This is always a consideration in our region, which covers a large geographical area. Many members highlighted two or three different locations, which has resulted in a fairly even distribution.

Question 4 **Which courses would you be interested in?**

	%
Saboflex	11
Lycra	14
Eureka	14
Spasticity	17
Update	14
Gym ball	12
Balance	18

Committee comments: These preferences will be considered when compiling the future programme of events

Question 5 **What time and when would you prefer courses to be run?**

	%
Midweek	47
Evening	24
Weekend	29

Committee comments: This shows a clear preference for midweek courses, which the committee will react to.

Question 6 **Are there any other topics or speakers you are interested in?**

Committe comments: This produced a significant list of ideas and options for courses, which gives the committee some great additional ideas for programme planning.

Question 7 **Would you be interested in neurophysio peer support?**

	%
Yes	81
No	19

Committee comments: The majority of respondents would be interested, and the committee would like to set up a coherent network of contacts for members throughout the region, perhaps focusing on the regions' hospitals? If anyone is interested in developing or contributing to this idea further, please make contact with our Chair, or any committee member.

The committee felt that they received some valuable information during this exercise, and felt it helped regional members to be more involved with their ACPIN region. Thank you again to all whom contributed. ■

NEWS GENERAL

Poole Hospital stroke unit wins Meggitt Excellence Award

Naomi Gibson Senior physiotherapist

Our stroke unit wrestles with the usual challenges of very acute medical care and long term rehabilitation within the geographical context of one 28 bedded unit and one team.

In 2007 the unit won the Meggitt excellence award for ward with the most innovations. This was a culmination of two years hard work from an experienced and specialist multidisciplinary team with a strong and dynamic physiotherapy representation. Some of the innovations made where as follows:

- The introduction of thrombolysis for appropriate patients involving considerable teamwork and a competency audit.
- A 'Tell your story' group for patients to discuss their experience of stroke, run by the speech therapists with assistance from psychologists.
- An 'Upper Limb' group for work with the less able arm in a social class setting with relatives assisting run by the occupational therapists and physiotherapists.
- A revised goal setting process involving the patient more fully and documenting weekly goals which are then displayed by their bedside to include relatives and other staff members.
- An education group for patients and relatives to gain a better understanding of the nature of a stroke and prevention measures; run by the stroke liaison nurse.
- Piloting the system of one named therapist for each discipline to follow the patient through their inpatient journey. A patient satisfaction survey identified high levels of patient satisfaction with this.
- Weekly therapy timetables for display by the bedside.
- The design, completion and good use of a therapies gym area including adjustable sink and quiet room.

The publicity and recognition from the award had an extremely positive affect of staff morale and the reputation of the ward. As neurological physiotherapists, we tend to consider these projects as an everyday part of our continuing professional development but I can recommend publicising them to the management of your trust and beyond! ■

The management of adults with spasticity using botulinum toxin: A guide to clinical practice

Update to the document published July 2002. Progress Report February 2008

Steve Ashford Clinical Specialist and Research Physiotherapist (on behalf of the development group)

The re-write of the Royal College of Physicians guidance entitled *The management of adults with spasticity using botulinum toxin: A guide to clinical practice* was started in October 2006 and is progressing well. The overall aim of the document is to provide practical advice on the use of botulinum toxin in the management of spasticity in adults.

The document is a multidisciplinary document, which gives current 'best practice' advice on management of spasticity with botulinum toxin. It places this in the context of wider rehabilitation and therapy involvement in the process. The document also provides specific advice on the involvement of non-medical injectors particularly physiotherapists, including involvement in administration of botulinum toxin.

Substantial progress on this work has been made with a final draft of the document to be completed at the end of this month. The document will then be sent for peer review to be undertaken by the Chartered Society of Physiotherapy, The Royal College of Physicians, British Society of Rehabilitation Medicine and The Association of British Neurologists.

Development group

- **Professor Lynne Turner-Stokes**, Consultant in Rehabilitation Medicine, Northwick Park Hospital, Harrow, Middlesex; Herbert Dunhill Chair of Rehabilitation Medicine, King's College London (Chair and lead editor)
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- **Professor Bipin Bhakta**, Charterhouse Professor of Rehabilitation Medicine, University of Leeds, Leeds
- **Ms Kate Heward**, Senior Lecturer in Occupational Therapy, Sheffield Hallam University, Sheffield; Private Practitioner
- **Dr Peter Moore**, Senior Lecturer and Consultant Neurologist, The Walton Centre for Neurology and Neurosurgery, Liverpool.
- **Mr Adrian Robertson**, Clinical Specialist Physiotherapist, Mid Yorkshire NHS Trust
- **Dr Anthony Ward**, Consultant in Rehabilitation Medicine, North Staffordshire Rehabilitation Centre, Stoke-on-Trent; Honorary Senior Lecturer, Keele University

Many thanks to all those involved in inputting in one form or another to the document so far; in particular to the UK Adult Physiotherapy Spasticity Forum as well as colleagues in the paediatric field and to those who have commented on initial drafts of the document to date. Special thanks to Toni Power, York St John University, and the group involved in the literature review by the UK Adult Physiotherapy Spasticity Forum. ■

Update on a new stroke self-management programme: ACPIN grant and beyond

Fiona Jones PhD MSc MCSP Principal lecturer

In 2003 an ACPIN grant helped me to develop a stroke self-management workbook tested in a series of single-case studies as part of my PhD which I then completed in 2005. Little did I know then what a well-timed grant of £432.00 would lead to.

Results from my first study completed in 2005 showed a significant change in self-efficacy and perceived control following introduction of the workbook (n=10) (paper in press). Changes were also seen in activity, participation and mood but these were not statistically significant. The concept of a one-to-one stroke self-management intervention was new but despite these promising results clearly more work was needed to refine and test the intervention with a larger group. The idea of applying for more grants and starting the process again seemed a daunting one; the completion of a PhD for me seemed a good time to stop!

Spurred on by positive comments about the workbook from stroke survivors, carers and colleagues and some possible over inflation of the evidence base on self-management interventions I started the process of trying to get more funding. The belief that 'one-size does not fit all' with self-management interventions has continued to keep me going, especially when reflecting on the complexities involved for each individual living after stroke

Stepping Out is now not just a workbook.

The ACPIN grant helped me produce and test the workbook, but I also recognised that this was a complex intervention, and the active ingredient could be more to do with the the partnership between the practioners and the stroke survivor. There was a clear need to develop suitable training for practitioners working with stroke survivors at any stage of the pathway to enable successful self-management skills.

The theoretical basis of *Stepping Out* began with Social Cognition Theory (Bandura 1997), and chronic disease self-management research (Lorig, Sobel et al. 2001). But the development is strongly influenced by a body of qualitative research, exploring coping and adjustment post stroke (Pound, Gompertz et al 1999; Bendz 2003; Cott, Wiles et al 2007; Ellis-Hill, Payne et al 2007; Jones, Mandy et al 2007).

Although the policy context in self-management has been moving at a pace particularly in the last four years, the research on self-management in stroke has barely started (Bury, Newbould et al 2005; Jones 2006; DH/Vascular Programme/Stroke 2007; Johnston, Bonetti et al 2007; Kendall, Catalano et al 2007; Department of Health February 2006). However, Chapter 3 of the new stroke strategy published last December now advocates the need to expand the number of self-management activities (DH/Vascular Programme/Stroke 2007). It is clear that *Stepping Out* needs to fit with both the concept of new managed stroke networks and with more established policies for self-management and long-term conditions.

In January and February 2007, three pilot sites were introduced to *Stepping Out* programmes. 45 practitioners attended workshops in Inverness, Christchurch and London. Over 150 workbooks were distributed to attendees of the workshops. In May 2007, focus groups were held at the three pilot sites to gain feedback about both the workshop and the workbook. Following this, a second version of the workbook has been developed to reflect comments made by practitioners, stroke survivors and carers.

What did practitioners say?

'We found automatically patients searched for stories of other individuals experiencing similar issues after their stroke, and found people who were of a similar age and background to themselves.'

'The workbook was used in different ways by different patients, for example one person used the stories to reinforce to himself that his recovery from the stroke was in fact much better, and he was more fortunate than he had first perceived himself to be.'

'There are some timing issues with using the workbook, and some patients did have difficulty filling in the target setting section, it may be better to have a longer timeframe rather than weekly targets, they liked the scoring though, even though for one patient his wife ended up filling it in.'

'It can be helpful when an individual finds it difficult to set anything other than a very ambitious long term goal - I worked with a woman and her husband to problem solve and break down their long term goals into short term targets , this helped us all to be more positive and focus on what she could be able to do rather than what she couldn't do at present.'

Practitioners agreed that overall the workshops had helped them to understand the background evidence in relation to self-management and self-efficacy. Those working in acute settings had more difficulties implementing the workbook and felt that the *Stepping Out* programme became more relevant as individuals went through the transitional phases when discharged from hospital, and later from community rehabilitation. They also highlighted the need to practice different strategies of facilitating target setting particular for those individuals that find it difficult to come up with short term targets, and may have some level of cognitive impairment.

A project advisory group now informs on the continued development of *Stepping Out*. Our multiprofessional group consists of stroke survivors, carers, stroke consultant, occupational therapist, physiotherapist, nurse consultant, psychologist and advisors from Connect (UK Charity for people with aphasia). The group meets three times per year and has been closely involved in the programme since January 2007. *Stepping Out* has consulted communication advisors from Connect throughout the project. A further focus group is being held in February 2008, in which we will seek feedback regarding the second version of the workbook.

The final version of the workbook will be completed by the beginning of March and we are now starting to take booking for workshops throughout 2008. *Stepping Out* will soon become a registered independent charity, but is currently a programme run from within the Faculty of Health and Social Care St George's University of London and Kingston University.

A phase one study to further investigate proof of concept and efficacy is planned to start in Belfast in spring 2008. Further studies are planned to develop and test an accompanying carers resource pack, this work is expected to start in March 2008.

In December 2007 we had a stand at the UK Stroke Forum ideas fair, and were able to gain more valuable feedback and comments from a multiprofessional group. We have a regular newsletter called *Stride* and our website www.steppingoutuk.org.uk was launched in June 2007 to coincide with WCPT. Our dedicated email address for enquiries is stepout@hscs.sgul.ac.uk

And now...

Writing this progress report for *Synapse* has made me reflect on the 'steps' (no pun intended) made since my first grant received from ACPIN. I

would like to thank all the stroke survivors, carers and colleagues that have provided such support and motivation to continue. But just a note of caution if you are considering applying for an ACPIN research grant ... small ideas can sometimes get out of hand!

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■

Information management and technology revolution

New iCSP network helps members embrace change

Andrea Peace Head of Professional Policy and Information, The Chartered Society of Physiotherapy

A 'Clinical Information Management' InteractiveCSP network has just been launched to help members deal with 21st century requirements for clinical and business information management that underpins the organisation and delivery of modern patient care.

Developments in e-health are challenging physiotherapists to re-examine how they deliver efficient and effective patient care. Lord Darzi's report *Our NHS, Our Future* identifies the need to ensure the 'Connecting for Health' programme brings about real clinical benefit. National information management and technology programmes in the four countries are delivering significant changes to practice in areas such as the rollout and use of clinical systems to record patient contact, the use of standardised clinical terminology within clinical systems, multidisciplinary record keeping in the electronic environment, and telemedicine developments and their impact on local service redesign. In private practice one of the challenges will be around connecting to NHS based systems to report on patient care being carried out on behalf of the NHS. This network aims to provide members with a focus for discussion and knowledge sharing on this topic.

Karen Middleton (Chief Health Professions Officer) recently identified data collection and management as one of the four current challenges for AHPs. She is concerned that not all AHPs are equipped with the right data to successfully make the case for their service, to support service redesign and to inform the commissioning process. The impact of not having the right information could be that services may not be commissioned causing the loss of physiotherapy jobs. This new network aims to help members deal with these challenges by providing a forum to discuss developing and using datasets to demonstrate the value of physiotherapy, and collecting management information to meet the challenges of waiting time initiatives, making a business case, and dealing with the financial reforms.

The network was devised and is moderated by the CSP Information Management and Technology (IM&T) Group. The group is concerned with ensuring the profession informs national information management and e-health developments so systems and practices are fit for purpose. Margaret Hastings, Chair of the IM&T group hopes the new network will 'provide a focus for all who need to provide evidence of the value of their service to managers and commissioners. We need to identify the standard data items physiotherapists should collect and ensure that the health service provides the clinical systems to extract the data from the physiotherapy record.'

For further information see: http://www.interactivecsp.org.uk ■

Establishing and running

an Early Supported Discharge (ESD) rehabilitation team for Stroke: four years experience

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The provision of Early Supported Discharge (ESD) following acute stroke is a key component in the National Stroke Strategy (DOH 2007). In the South West Locality of Surrey PCT, we have been running such a service since October 2003. Our team covers a semi-rural area based around Guildford of between 1000-1200 sq miles and a population of 250 000.

The team is a specialist branch of Intermediate Care and was formed as part of a whole system working group expanding acute and community services for stroke during 2002-3. It was developed from scratch and follows government recommendations (DOH 2001, 2005) and the *National Clinical Guidelines for Stroke* (RCP 2004). The model adopted is that set out in the *Cochrane Review of ESD schemes* (Langhorne et al 2005), which essentially showed that as good care could be provided by specialist teams in the community *and* reduce inpatient length of stay by eight days. Funding was achieved through the drive to reduce hospital bed days and as such forms a crucial part of the Stroke Pathway in our area. Up to twelve weeks rehabilitation and support at home can be provided, with visits possible several times per day between 8.00am and 8.00pm.

ADMISSION CRITERIA

It is essential that clinicians recognise that not all services are suitable for all patients and we know that the more severely affected patients will fare better in an inpatient rehabilitation facility (Langhorne et al 2005). Successful rehabilitation in the community following acute stroke demands strict admission criteria to determine suitability (*Figure 1*). Many patients live alone, and since the majority of visits are conducted by lone workers, our criteria must be robust. We do not offer 24-hour care. In a few cases we have made a clinical decision to accept patients who did not fully meet these criteria, particularly with regard to transfers. Without exception, these cases have resulted in considerable logistical difficulties. We now endeavour to adhere to criteria for all referrals.

• Confirmed stroke diagnosis *and* scan
• Medically stable
• Rehabilitation potential
• Would remain in hospital (or require admission) without the service
• Patient/carer agreement for early supported discharge
• Independent transfers if alone / minimal assistance with spouse or carer

Figure 1 ***Admission criteria***

The majority of our ESD referrals are generated from the acute stroke unit (Royal Surrey County Hospital), with smaller numbers from the nearby rehabilitation hospitals. Referrers are encouraged to identify patients quickly and inform our team. Liaison continues so that discharge is facilitated as soon as possible, with the patient generally seen at home on the same day. A large number of patients are only a week post-stroke when discharged home.

We also accept occasional admission avoidance referrals for patients not admitted into the acute stroke unit for whatever reason. Best practice indicates that optimum stroke management includes full investigations and comprehensive medical assessment, including scanning. This can be undertaken in the fast track TIA/Stroke Clinic and, if appropriate, referral made to the team.

Our early discharge scheme is firmly embedded into the Stroke Pathway. Strong links are main-

tained with our partners in the acute sector, enabling us to dovetail complementary services. Management of complex referrals is discussed collaboratively in conjunction with our local consultant stroke physician.

MULTIDISCIPLINARY TEAM

Our specialist Multidisciplinary Team (MDT) is staffed for a caseload of 20 concurrent patients (*Figure 2*). The average caseload is 17. Most staff are part-time and, with careful planning, we can provide good cover across disciplines throughout the year.

• **Occupational Therapists** x 1.5 WTE (2 posts – x 1 Band 7, x 0.5 Band 6 non-rotational)
• **Physiotherapists** x 1 WTE (2 posts – Band 7, Band 6 neurology rotation)
• **Speech and Language Therapi**st x 0.5 WTE (Band 7)
• **Stroke Nurses** x 1 WTE (2 posts – Band 7 job-share)
• **Rehabilitation Support Workers** x 2 WTE (3 posts – Band 3)

Figure 2 ***Staffing***

In addition we fund an additional Support Worker post in Intermediate Care to cover visits required after 4.00pm and at weekends.

ANNUAL EVALUATION

Since our service began we have collected data on all patient episodes for comprehensive evaluation. Admission numbers have steadily risen (*Figure 3*).

Year	Admissions
2004 – 2005	59
2005 – 2006	75
2006 – 2007	82
2007 – 2008	70 to date (projected 86)

Figure 3 ***Admissions***

Demographics and clinical information are recorded in addition to standard outcome measures (Functional Independence/Assessment Measure FIM/FAM, Visual Analogue Self Esteem Scale VASES, Carer Strain Index CSI) scored at admission, discharge and 6/12 post-stroke. Some outcomes from the last financial year are detailed below.

We set no upper age limit and have treated patients ranging in age from 22-94 years (mean 74 years). The vast majority of our patients are ESD referrals (91%) with just 9% admission avoidance. This is in accordance with best practice: patients with suspected acute stroke are optimally managed by hospital admission initially (DOH 2007).

Our case mix (*Figure 4*) indicates a broad spread of stroke subtypes. Outcomes demonstrate that the service can offer input to patients with all presentations, not just those with the highest level of functional ability. However it is apparent from the literature that the severely dependent patients are least likely to benefit from ESD services (Langhorne et al 2005).

Classification	%
Partial Anterior Circulation Stroke (PACS)	55
Lacunar Stroke (LACS)	21
Posterior Circulation Stroke (POCS)	11
Total Anterior Circulation Stroke (TACS)	6
Primary Intracerebral Haemorrhage (PICH)	2
Brainstem	2
Subarachnoid Haemorrhage	1
Subdural Haematoma	1
Unclassified	1

Figure 4 ***Case mix***

Our mean length of stay is between eight to nine weeks, with 93% patients remaining at home on discharge from the team. Last year there were three re-admissions of which only one was stroke-related. From admission to discharge and through to review, FIM/FAM scores increased, CSI scores decreased and VASES scores increased and were maintained. Patient satisfaction has been excellent – it has been particularly encouraging for the team to receive positive feedback in formal anonymous satisfaction surveys (78% response rate) and anecdotally in clinic or by letter, including those sent to the local paper.

SERVICE IMPROVEMENTS

We continue to review our service and actively encourage feedback from staff and service users/carers. A number of changes and improvements have been implemented as a result:

- ***Clinical Governance meetings*** – service review held quarterly with the MDT and consultant stroke physician, to discuss and implement new ideas.

- ***Referral process*** – use of flow charts and checklists to assist management of referrals.
- ***Educational meetings*** with the acute service – held every two months to develop and strengthen our links. Usually includes three short case studies of patients referred from the acute stroke unit, with contributions from staff in both teams.
- ***Patient information*** – includes staff roles and photographic identification. The discharge process is explained at the start of our involvement – patients are well-prepared and arrangements made for ongoing services in good time if needed.
- ***Post Stroke review*** – introduced a 3/12 post discharge review for those patients who are more than 6/12 post stroke.
- ***Shared information*** – community matrons and GPs are copied on reviews to aid monitoring of patients in the long term.
- ***Physiotherapy follow-up*** – we are able to offer outpatient physiotherapy on a reducing basis for patients requiring less regular input.
- ***Presentations*** – staff have been invited to deliver presentations at local, regional and national (UK Stroke Forum 2006, *Best of Health 2008*) level which has kept the team at the forefront of pioneering best practice for stroke in accordance with the available published evidence.

STAFF DEVELOPMENT

Establishing and running this service has created opportunities for professional and personal development for all members of our team. We have developed a rich opportunity for broadening our scope of practice and enjoy cross-discipline working, problem solving and pushing boundaries. Students from all disciplines regularly undertake practice placements within the team.

CONCLUSION

We have demonstrated through annual evaluation over the last four years that our service provides effective early supported discharge/admission avoidance and effective home-based rehabilitation. Analysis has shown a substantial reduction in length of stay in the acute sector, from 49 to 19 days in the last Sentinel Audit. The place of our team in the Stroke Pathway has been a factor, and in achieving this we offer a high quality economical service. We have shown consistent positive clinical outcomes, low onward referral rates (including social care), low re-admission rates and high levels of patient satisfaction. We are hopeful that the service will soon be expanded to provide equity across a wider geographical area, resulting from reorganisation and formation of a larger Trust.

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ACQUIRED BRAIN INJURY Competency with the complex

Lecture abstracts
with references and speaker biographies

INTENSIVE CARE MANAGEMENT OF TRAUMATIC BRAIN INJURY

Dr Martin Smith
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There has been a marked decline in mortality from severe traumatic brain injury (TBI) in adults over the last two decades because of improvements in resuscitation and pre-hospital care[1]. There have also been simultaneous advances in our understanding of the pathophysiology of brain injury and in monitoring and imaging techniques. This has allowed the development of evidence based intensive care management of patients with TBI[2].

PATHOPHYSIOLOGY

Head injury is a heterogeneous diagnosis, encompassing a wide range of pathologies including diffuse axonal injury, focal contusions and space occupying haematomas. If the initial (primary) injury is not immediately fatal, it is usually exacerbated by secondary events that lead to secondary brain injury. This develops over the subsequent minutes, hours and days and has an adverse effect on outcome. The primary injury activates an auto-destructive cascade of ionic, metabolic, inflammatory and immunological changes that render the brain more susceptible to secondary physiological insults and ultimately results in irreversible cell damage or death. Secondary insults arise from both systemic and intracranial changes that initiate or propagate pathophysiological processes and fatally damage neurones already rendered susceptible to injury by the primary insult. Systemic hypotension and hypoxemia are the major causes of secondary brain injury and primary determinants of adverse outcome after TBI[3].

MONITORING

General monitoring allows maintenance of optimal systemic physiology but will not detect changes in the brain. Cerebral monitors allow measurement of CPP and assessment of the adequacy of oxygen delivery to the brain and guide therapy to target specific physiological changes to maintain a balance between cerebral metabolic supply and demand[4].

Intracranial pressure[5] ICP cannot be reliably estimated from any specific clinical feature or CT finding and must actually be measured. Measurement of ICP via a

ventricular catheter offers the gold standard for ICP monitoring but several less invasive devices are available. Fibreoptic and microtransducer devices are miniature probes that can be inserted into the brain parenchyma via a burr hole at the bedside. ICP monitoring allows determination of CPP (CPP = MAP – ICP) and detection of abnormal ICP waveforms.

Cerebral oxygenation Several methods have been developed to detect brain ischaemia and guide management[6]. A catheter placed in the jugular bulb allows sampling of venous blood draining from the brain and provides a global assessment of the balance between cerebral oxygen supply and demand. Jugular desaturation (SjvO2 < 50%) is associated with increased mortality after TBI and worsened outcome in survivors. However, because SjvO2 is a global measure, a normal value does not exclude significant regional ischaemia. Focal brain tissue oxygen tension (PtiO2) can be measured using small microprobes. Initial low values rise over the first 24 hours after injury and both the depth and duration of hypoxia are related to outcome.

Brain tissue biochemistry Cerebral microdialysis (MD) is a well-established laboratory tool that is increasingly used as a bedside monitor to provide on-line analysis of brain tissue biochemistry during neuro-intensive care[8]. MD has the potential to provide early warning of impending cerebral hypoxia/ischaemia.

Multi-modal monitoring Individual monitoring techniques provide information about specific aspects of cerebral physiology but all have disadvantages and most suffer from significant artefact. Decisions to treat are therefore not usually based on a change in one variable alone. Monitoring of several variables simultaneously (multimodal monitoring) allows cross validation between monitors, artefact rejection and greater confidence to make treatment decisions[4].

INTENSIVE CARE MANAGEMENT

The intensive care unit is where rigorous and continuous monitoring and treatment are delivered to patients with TBI with the sole objective of minimising secondary brain injury[2,9]. The ICU management of TBI has undergone extensive revision as evidence accumulates that longstanding and established practices are not as efficacious or innocuous as previously believed[10]. The primary goal of identifying and treating intracranial hypertension has been superseded by a focus on prevention of secondary brain ischaemia by a multi-faceted neuroprotective strategy of maintenance of cerebral perfusion pressure (CPP) and cerebral oxygen delivery. It is likely that specialist neuro-critical care, with protocol guided therapy, improves outcome in patients with severe head injury[9]. Consensus, expert guidelines are available to assist management after TBI[11,12].

Ventilation Control of PaO2 and PaCO2 are essential to maintain favourable cerebral haemodynamics and oxygenation. Mechanical ventilation is therefore a key part of the treatment of severe TBI. Patients with isolated head injury can be managed with standard ventilatory techniques but those with co-existing chest pathology or severe head injury are at high risk for developing acute lung injury. The classic teaching of no or low level positive end expiratory pressure (PEEP) to prevent rises in ICP is inappropriate because ventilation without PEEP often fails to correct hypoxaemia. With adequate volume resuscitation PEEP actually decrease ICP because of improved cerebral oxygenation.

Cardiovascular support Even short periods of hypotension (MAP < 90mmHg) are associated with adverse neurological outcome and should be meticulously avoided[13]. Higher mean pressures may be necessary to maintain an adequate CPP in the presence of raised ICP and this may be achieved with volume resuscitation and vasopressors/inotropes as required. Euvolaemia is the primary resuscitative goal for patients with severe TBI and different fluids may be used to support CPP, with the emphasis on preserving adequate intravascular volume[1,2]. There is no ideal fluid for patients after severe TBI and both crystalloids and colloids are suitable. Glucose containing solutions should be avoided because the free water liberated following the metabolism of glucose can worsen cerebral oedema and, in the anaerobic brain, glucose is metabolised to lactate which worsens secondary injury[14].

ICP and CPP guided therapy Conventional approaches to the management of TBI have concentrated on a reduction in ICP to prevent secondary ischaemia despite the absence of controlled randomised studies that demonstrate outcome benefits. However, over the last decade there has been a shift of emphasis from primary control of ICP to a multi-faceted approach of maintenance of CPP and brain protection. Although there is debate about the optimal level for CPP, there is a consensus that it should be maintained between 50-70 mmHg[12] as higher targets are often achieved only at the expense of significant complications[15].

Management of intracranial hypertension ICP should be treated when > 20 mmHg[5,12].

i) Position Elevation of the head reduces ICP, whilst rotation of the head and flexion of the neck increase it. The patient should be positioned with moderate head-up tilt (up to 45°) and a neutral position of the head and neck but care must be taken to ensure that the head-up does not cause a reduction in MAP.

ii) Hyperventilation was once the cornerstone of ICP control after TBI but over the last decade has come under more fire than any other therapy. Empirical and excessive hyperventilation is associated with adverse neurological

outcome[16] because regional ischaemia may be worsened[17]. The routine use of hyperventilation is discouraged and current guidance recommend PaC02 targets of 4.0 – 4.5 kPa[12]. Modest hyperventilation may be indicated to control intracranial hypertension in selected cases but should only be undertaken in conjunction with cerebral oxygenation monitoring in order to detect cerebral ischaemia.

iii) Osmotic therapy Mannitol is a standard of care in the treatment of intracranial hypertension, although it has never been subject to a randomised controlled clinical trial against placebo. Mannitol (0.5g/kg) effectively reduces elevated ICP and increases CPP and cerebral blood flow in certain settings of intracranial hypertension. ICP-directed treatment is more beneficial than treatment directed by neurological signs or physiological indicators[18]. There is substantial experimental data to support the use of hypertonic saline solutions (HSS) as effective alternative treatment of elevated ICP. The beneficial effects of HSS are likely to be related not only to an osmotic effect but also to haemodynamic, vasoregulatory, immunological and neurochemical effects[19]. Whilst there can be little doubt that HSS are effective treatments of elevated ICP, there are no large, randomised comparisons with conventional osmotic agents or long-term functional outcome studies.

iv) Barbiturates reduce ICP and have protective effects in the context of focal ischaemia because of suppression of cerebral metabolism and associated reduction in CBF, effects on vascular tone and free radical scavenging. However, the clinical use of barbiturates for the control of intracranial hypertension unresponsive to other treatments is highly contentious and any potential beneficial effects may be offset by side-effects, particularly hypotension[12].

v) Surgical methods Drainage of CSF via an EVD is an effective means of reducing ICP. Another option for treating refractory intracranial hypertension is decompressive craniectomy, an operation to remove a large area of skull to increase the volume of the cranial cavity and thus decrease its pressure[2]. There is divided opinion on the relative benefits and risks of this procedure and these are currently being addressed by a multi-centre, randomized controlled outcome trial – the RESCUE-ICP study [http://rescueicp.com/].

Glycaemic control Severely head-injured patients frequently develop hyperglycaemia and this exacerbates secondary injury and worsens neurological outcome[1,14]. The mechanisms underlying this effect include hyperosmolality, lactic acid production, alterations in neuronal pH and increases in excitatory amino-acids. Tight glycaemic control may therefore improve outcome after TBI.

Therapeutic hypothermia Although beneficial in animal models, the results of moderate hypothermia (33-35°C) in human trials have been disappointing. A prospective, randomised study of moderate hypothermia (33°C) in TBI was terminated early because of increased morbidity in patients over 45 years of age treated with hypothermia[20]. There was possible benefit to patients who presented already hypothermic but older patients had such high rates of medical complications that hypothermia was detrimental regardless of their admission temperature. However, moderate hypothermia is an effective method of reducing raised ICP and remains a treatment option in younger patients[2]. Hyperthermia worsens outcome after TBI and should be treated aggressively[21].

SUMMARY

Over the last decade there have been improvements in the ICU management of patients with severe TBI that have been guided by better understanding of the pathophysiology of brain injury and by new and improved monitoring techniques. There has been a shift of emphasis from primary control of ICP to a multi-faceted approach to maintenance of cerebral perfusion and oxygenation. The development of protocols and treatment guidelines is to be welcomed but must not prevent tailored therapy. The days of nihilism in the management of severe TBI have been replaced by the beginnings of evidence based practice.

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PHYSIOTHERAPY MANAGEMENT IN EARLY BRAIN INJURY: PRACTICAL, PROACTIVE INTERVENTION

Adrian Capp MCSP

The timing of the acute mobilisation/rehabilitation phase of patients following severe traumatic brain injury (TBI) remains controversial. There are two distinct phases within the neurocritical care setting, maintenance and rehabilitation. Currently, there is limited evidence based guidance to aid the clinician in their decision making processes as to when to commence this intervention or the effectiveness of interventions. Comparisons have been made between stroke and TBI regarding the secondary pathophysiological effects, especially the concept of the ischaemic penumbra. The use of current physiological thinking, best available evidence and expert opinion can assist in the choice of early interventions and their efficacy. Initially, during the acute phase, physiotherapy intervention concentrates on the maximisation of pulmonary function, maintenance of muscle length and joint range. This 'maintenance phase' is crucial to allow the patients to access the rehabilitation/mobilisation phase with the minimal amount of preventable impairment. The 'rehabilitation/mobilisation phase' ensures that the patient is given the opportunity to appropriately interact with their environment in order to facilitate their functional recovery. Due to the nature of this patient group, low arousal level, fluctuating tone & challenging behaviour, the therapist must be aware of the any manual-handling implications, so sound clinical reasoning linked to robust risk assessment, is of paramount importance to ensure the safety of both patient and therapist.

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Adrian Capp has worked extensively within the field of neurology and neurosurgery in New Zealand and London for eleven years. During the last seven years he has gained further experience in the management of complex patients in critical care and on the neurosurgical and neurology wards at The National Hospital for Neurology and Neurosurgery, London, UK (NHNN). He completed an MSc in Adult Critical Care at Imperial College London in 2005 and has subsequently specialised in neurorehabilitation in the acute setting. He has fostered the integration of physiotherapy within a transdisiplinary tracheostomy team for neurological patients at NHNN. He has taken part in an international bench marking process regarding tracheostomy care in Australia and the UK. He teaches regularly on physiotherapy and head injury management to undergraduate and post graduate students and has recently written a book chapter on respiratory considerations in neurology.

COCHRANE REVIEW: BOTULINUM TOXIN FOR ADULT SPASTICITY AFTER STROKE OR NON-PROGRESSIVE BRAIN LESION

Bernie Lyons MCSP
Moore AP, Bhakta BB, Bamford JM, Cardwell C, Logan I

BACKGROUND
In most of Europe, botulinum toxin type A is now licensed to treat spasticity in the forearm finger and wrist flexors in people with stroke. Italy has extended this further and is also licensed to use botulinum toxin to treat lower limb spasticity.

OBJECTIVES
The objective of this review is to evaluate the efficacy of botulinum toxin in the treatment of limb spasticity after stroke or non-progressive brain lesion.

METHODS
The following databases were searched;
- Cochrane Stroke Group Trials Register, the Cochrane Injuries Group and the Cochrane Infectious Diseases Group to request a search of their trials.
- Ovid electronic databases: Evidence Based Medicine Reviews, MEDLINE , EMBASE CINAHL and AMED. Further published studies were identified using citation tracking. Authors and researchers active in this field were also contacted and included abstracts and articles in all languages.

SELECTION CRITERIA
Types of studies All published and unpublished unconfounded randomised controlled trials where botulinum toxin type A or B was used to treat limb spasticity were considered.

Participants Adults with stroke or non-progressive brain injury, with limb spasticity.

Interventions All studies investigating comparisons of treatment with botulinum toxin versus placebo, or open control treatment. All studies investigating treatment with botulinum toxin type A, or B with placebo.

Outcome measures Impairment based and functional outcome measures as well as adverse events, and deaths from all causes were measured.

Primary outcome measure The patient/carers' subjective global assessment of improvement/benefit.

Timing of outcome measurements
- 4 to 8 weeks post injection
- 12 to 16 weeks post injection.

Data collection and analysis After screening all identified titles and abstracts only interventional studies on adults were included. Two review authors independently considered all interventional studies that met previously defined inclusion criteria for eligibility. Two review authors also independently assessed each included article for relevant data extraction. Disagreements were resolved by discussion with a third party.
Statistical analysis Cochrane Review Manager software was used for all analyses. Continuous outcome measures were summarised using mean differences and standard errors of mean differences. Ordinal outcome measures were summarised as dichotomised data. A qualitative description of adverse events was conducted. Heterogeneity was considered using the I 2 statistic and chi-squared tests and publication bias was investigated for the primary outcome measure using a funnel plot.

Subgroup analyses Sensitivity analyses were performed to assess the impact of only trials that: had adequate randomisation; were double blind; adequate concealment of randomisation and adequate follow up.

RESULTS
The search resulted in 1036 hits following removal of duplications. Following application of inclusion/exclusion criteria, 17 randomised controlled trials were included in the review. Data analysis is ongoing and preliminary results will be discussed.

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Bernadette Lyons qualified as a physiotherapist in 1990 University of Ulster at Jordanstown Northern Ireland. She has worked in the Royal Group of Hospitals from July 1990 to present time. She is currently a Senior 1 physiotherapist in the Elliott Dynes Rehabilitation Unit working in the stroke unit and day hospital. From 2000-2004 she received a Bursary from the R&D office to carry out a part time MSc in Advanced Practice of Physiotherapy. In 2005-2007 she had a career break to work as a research associate on a multi-centered RCT involving stroke patients in Northern Ireland. From 2005- 2007 she received a Cochrane Fellowship to carry out a Cochrane systematic review examining the use of Botulinum toxin to treat spasticity in patients with non progressive brain injuries. She is married to Jeremy and has two children.

NEW TECHNOLOGIES FOR REHABILITATION OF TRAUMATIC BRAIN INJURY

Dr Nigel Harris
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This work is presented on behalf of the SMART rehabilitation consortium and Bath Neuro Rehabilitation Services.

There have been considerable advances in micro-electronics and motion sensor technology in the last five to ten years[1,2]. These devices, along with multimedia PC's and video cameras are now widely available at relatively low cost. This technology, which can track limb and body position, that had previously only been found in specialist biomechanics laboratories is now available for use in a clinical or home environment. There are considerable practical and organisational difficulties that need to be overcome, before this type of technology can be used to support or deliver therapy[3]. However, the biggest challenges remain around the interface between the therapy platform, the clinician and the patient, as we try to work out how best to use the technology to facilitate motor relearning.

The SMART rehabilitation project (http://research.shu.ac.uk/chscr/smart/) was a three year package of work to investigate the use of technology to support home rehabilitation of patients following stroke. The system was intended to support motor relearning by providing feedback (knowledge of performance) during task specific repetitive practise of reach and grasp and hand to mouth exercises. A key feature of the work was the involvement of a multidisciplinary team of clinicians and engineers, patients and carers, from the earliest stages of the project[4]. Evaluation of the prototype system was carried out during therapy sessions and independently by stroke patients at home. The hardware uses two MTX inertial sensors (Xsense Technology, Enschede) attached to the upper and lower arm, these are connected to a wireless interface that transmits data to a computer. Customised software was developed for data collection, data processing and to provide knowledge of results via summary measures and a 3D computer representation.

We have carried out preliminary work to assess the feasibility of using the system with patients within a neuro-rehabilitation unit following traumatic brain injury or with Locked in Syndrome. Three patients used the system daily for one to two weeks, with the assistance of a therapist. During the rehabilitation sessions the patient performed a reach exercise as directed. Human factors issues were assessed with structured interviews with the therapist and patient. Kinematic data were recorded by the system and then replayed using computer animation, along with summary variables, such as elbow flexion/extension and length of reach. The SMART rehabilitation system was able to provide measurable changes in the range of functional movement in all patients, even though these were quite small. Positive human factor issues were that patients could see and understand their movements and could describe the differences and partake in goal setting. Patients found that observing the small movements they achieved was very motivational and that they could follow changes in their movement over time. The system could be used concurrently with other therapy devices. Negative issues were the robustness of the motion tracking system, which needed to be improved and the feedback of knowledge of results was poor ie graphs and charts

We have shown that commercial motion tracking devices, coupled with suitable software, can be successfully used in a clinical rehabilitation setting. Subtle changes in movement patterns and ranges, which may not be reflected in routine functional outcome measures, can be quantified. The system is currently being re-developed to allow full wireless operation of the inertial sensors, further work is needed on the most appropriate means of presenting results back to therapists and patients/carers.

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Dr Nigel Harris joined the Royal National Hospital for Rheumatic Diseases (RNHRD) in 2001 as Head of Clinical Measurement and Imaging and senior lecturer in the School for Health at the University of Bath. He is a fellow of the Institute of Physics and Engineering Medicine and member of the Council of the Society for Research in Rehabilitation and the Bath Institute for Medical Engineering. The RNHRD specialises in the treatment of people with long term conditions focusing on rheumatic diseases, neurorehabilitation and pain management. The Clinical Measurement and Imaging team provide a range of specialist investigations including: bone densitometry, thermography, laser doppler imaging and capillaroscopy.

Nigel has a particular interest in physiological measurement, ambulatory monitoring and biomedical engineering. Current projects include measurement of free living activity in people with long term conditions, mechanisms of complex regional pain syndrome and use of new technologies for neuro-rehabilitation. His research interests have led to a joint project with Sheffield Hallam University in SMART rehabilitation entitled 'Technical applications for use in the home with stroke patients'. This research examines the appropriateness and effectiveness of technology to support hospital or home based rehabilitation programmes for people with stroke.

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Dr Richard Greenwood is a consultant neurologist to the National Hospital for Neurology and Neurosurgery, Queen Square, and the Homerton University Hospital; he has been a consultant neurologist since 1983. He is Director of the Homerton Regional Neurological Rehabilitation Unit, and lead clinician for the Acute Brain Injury Service at the National Hospital. His particular clinical interest is in the natural history and rehabilitation of single-incident brain injury including head injury, and his research interests are focussed on restorative neurology and drivers of brain plasticity after brain injury.

SERVICE PROVISION IN ABI REHABILITATION: CURRENT DRIVERS

Dr Richard Greenwood

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The overall economic consequences of traumatic brain injury (TBI) rival those of stroke[1, 2]. The incidence of newly disabled adult survivors one year after TBI is 100–150 per 100,000 of the population[3]. Most survivors are young and have a near-normal life expectancy[4]; thus the burden on public health and social care is substantial.

The beds that these patients occupy in 'usual' care are not utilised appropriately and their recovery is inevitably suboptimal[5]. Studies of TBI in the UK have confirmed that a major 'bottleneck' in the clinical pathway is a lack of organised inpatient AR, after patients have been discharged from acute neurosurgical or intensive care but prior to their participation in either early inpatient or community rehabilitation[6]. Many patients are 'stuck' on inappropriate wards, acquire avoidable complications, fail to make optimal gains and fall through the net; lack of timely and appropriate rehabilitation results in poor long-term outcome[7]. At present, organised inpatient AR facilities in the UK are extremely scarce. They are unlikely to become widespread unless their effectiveness is demonstrated.

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'UNSTICKING THE STUCK': PHYSIOTHERAPY CHALLENGES IN POST ACUTE BRAIN INJURY REHABILITATION

Jo Tuckey MCSP

The challenges faced in post acute brain injury rehabilitation are invariably highly complex requiring an interdisciplinary team approach. One of the many physical impairments that a large majority of brain injured patients face is the loss of joint range and soft tissue length in their limbs ie they become 'stuck'.

This presentation discusses not only why physiotherapists should address this impairment, but also how this can be achieved. It focuses on the differing pathologies which may be the cause of this impairment, including heterotopic ossification, hypertonia and motor and sensory dysfunction. It then goes on to discuss some of the combined therapy and medical interventions used in treatment, including splinting, exercise, antispasticity medication and surgery.

Case examples and referenced literature are used to describe the clinical reasoning processes which have been used in the treatment of patients with the differing pathologies described. In so doing, the wider physical, cognitive and behavioural challenges are also highlighted.

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Jo Tuckey qualified with a graduate diploma from King's College Hospital School of Physiotherapy in 1990. She has specialised in neurology since 1992. Since qualifying she has worked in several NHS hospitals including The National Hospital for Neurology and Neurosurgery, King's College Hospital and the Regional Neurological Rehabilitation Unit, Homerton Hospital, where she was the clinical specialist physiotherapist in neurology for five years. In addition she has worked at a specialist neurorehabilitation clinic in Germany. She completed a masters degree in neurorehabilitation at Brunel University in 2000. In 2006 she started a neurophysiotherapy service working full time through a North London private practice, which she also leads. Her clinical work is now mainly domiciliary and she continues to teach on a variety of postgraduate and MSc courses.

CHALLENGING BEHAVIOUR AFTER BRAIN INJURY: THE PHYSIOTHERAPISTS ROLE

Gina Sargeant MCSP

Within this presentation Gina aims to explore; our perceptions of challenging behaviour. How does it restrict a patient's ability to engage in physiotherapy and how it can ultimately impact on a patient's recovery from a traumatic brain injury?

By considering the perspectives of all those affected by challenging behaviour, physiotherapists can aim to understand and respect both the patient and family; establish working relationships with them and use goals to direct their rehabilitation. Through the implementation of a variety of approaches and skills we can engage with the 'Changed Person' and family at any stage of their recovery, maximising the outcome of our physiotherapy interventions, and assisting them in achieving success.

Throughout the patient journey we need to measure both recovery and outcome, so we need to appreciate how behaviour impacts on traditional neuro outcome measures and still be able to provide evidence for our practice. Physiotherapy services too, must acknowledge challenging behaviour ensuring we provide both quality and safety to all those involved.

In conclusion, Gina suggests why as physiotherapists we are well equipped to manage challenging behaviour and how we can play an essential role within an interdisciplinary team that includes the family and patient when faced with the challenge of behaviour.

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Gina Sargeant qualified from Salford in 1994, and has worked with head injured patients in the acute hospital setting for nearly all of her career. She is currently clinical specialist at Bath Neuro Rehabilitation Services at the Royal Mineral Water Hospital, Bath and 'challenging behaviour' in its various guises has been a part of that puzzling patient presentation throughout. Gina once noted that when being introduced at the local university, the head of school described the role of physiotherapy in head injury as 'extreme –physio' something that initially alarmed her, however on reflection – is it dangerous? – not really; is it difficult? – at times yes; does it require patience, skill and cunning? – definitely – and that can be down to both complexity of patient need, behaviour exhibited and therapist; Whether that behaviour is challenging or not remains to be seen...

A PATIENTS PERSPECTIVE

Nick Hedley

A talk about my full brain injury 'experience', from a personal patient's perspective, whose views and perceptions of the events and the medical environment around him during the brain injury treatment/recovery process will hopefully illuminate or increase understanding of the perceptions of a patient. This patient in particular has confident presentation skills and is able to articulate himself well, and a strong vein of humour runs through his outlook on the experiences he has coped with since his traumatic complex brain injury.

Nick Hedley is 26. In 2001 he started a three year BA (Hons) in primary teacher training. He also worked part-time and was quite adept at managing time. He was also at this time very physically fit. However, on 23rd August 2003, he was found unconscious in a supermarket car park in the early hours of the morning, with some quite severe head injuries and damage to his brain. Assault was suspected, but due to a lack of witnesses and the amnesia resulting from swelling of the brain, he has no memory of what occurred on that night. After two hospitals and a stint at Rehab UK, he returned to university, and is currently there now.

DISCHARGED AND FORGOTTEN: MANAGING THE EFFECTS OF MINOR BRAIN INJURY

Anne McSherry

Physical recovery following brain injury is very much viewed as the primary role for the physiotherapist. There are many challenges presented to our profession when it comes to the management of clients with mild brain injury, whose clinical presentation are more often related to behavioural or social functioning deficits.

This presentation hopes to provide an insight into the sequelae of mild brain injury and present the implications for clinical practice using current evidence, and will include some innovative interventions given the speakers clinical background.

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Anne McSherry qualified from Ulster Polytechnic now University of Ulster in 1984 and completed the Advanced Bobath course in 1993. From 1994 to 2004 whilst working as a Senior 1 in the North & West Belfast Young Physically Disabled Programme including Brain injury she developed an interest in the mind/body relationship. In 1999 she completed an MA in Psychoanalytic Studies at Queen's University Belfast – her dissertation being: *A psychoanalytic insight into psychosomatic illness*. During 2003-4 she was a Research Associate in the University of Ulster physiotherapy pilot study comparing Bobath therapy and gait specific training in acute stroke. From 2004 she has worked as a Clinical Specialist promoting the role of physiotherapy in the treatment of post traumatic stress disorder (PTSD) in the multi-disciplinary trauma team in the now Belfast Trust. The team has presented the results of their innovative work on an international stage and has two research papers pending. From August 2006 to the present she was the acting co-ordinator of the Community Brain Injury team and is now the Senior 1 physiotherapist in the team. Her present research interest is in the acknowledgement of PTSD symptomology in mild brain injury.

THE CHALLENGE OF COMMUNITY REHABILITATION: AN INTERDISCIPLINARY PATHWAY FOR ACQUIRED BRAIN INJURY

Vicky Richards

The presentation will include a brief history of the Community Brain injury Team, its client group and types of interventions available. The development of care pathways by the team and the difficulties and limitations experienced.

Examples will be shown of the teams process map and its pre-intervention documentation. Discussion of how ICP's help provide an equitable service, and allow good communication. This ensures smooth team meetings and staff induction, whist providing a tool for clinical audit.

Vicky Richards initially undertook RMN training in Cardiff, qualifying 1982, then RGN at UHW qualifying 1984. Following this she returned to work in psychiatry until 1987 when she commenced work as a community liaison sister with the Community Memory Project. During this time she undertook a Diploma in Counselling at the University of Wales College in Newport. In 1995 she returned to work in psychiatry as a clinical nurse specialist in neuropsychiatry. In 2000 she completed MSc in family health studies at the University of Glamorgan. She has worked in her current position as clinical nurse specialist and coordinator of the Community Brain Injury team since the team was commissioned in October 2001.

REVIEWS ARTICLES BOOKS COURSES

Reviews of research articles, books and courses in *Synapse* are offered by regional ACPIN groups or individuals in response to requests from the ACPIN committee. In the spirit of an extension of the ERA (evaluating research articles) project they are offered as information for members and as an opportunity for some members to hone their reviewing skills. Editing is kept to a minimum and the reviews reflect the opinions of the authors only. We give the authors of the original book or paper the opportunity to respond. We hope these reviews will encourage members to read the original article and not simply take the views of the reviewers at face value.

ARTICLE

Stroke patients and long term training: is it worthwhile?

A randomized comparison of two different training strategies after rehabilitation

Langhammer B, Lindmark B, Stanghelle JK (2006) Clinical Rehabilitation 21 pp495–510

Review by **Nicola James**, Oxford ACPIN

Title

The title accurately describes the study undertaken.

Authors

The first two authors appear to be academics at physiotherapy departments at Oslo University College in Norway and Uppsala University in Sweden while the last author appears to work at the Sunnaas Rehabilitation Hospital in Norway.

Abstract

The abstract clearly sums up the method and results of the study. This research studied stroke patients in their first year after inpatient rehabilitation. It compared an intensive physiotherapy led exercise programme with physiotherapy as required based on the patients' needs. Both groups improved significantly up to six months, at which point function stabilised. The groups did not differ significantly when retested at three, six and twelve months. Motivation and compliance with exercise was high in both groups and all subjects maintained their level of function.

Introduction

The introduction is concise and thorough. It sums up the lack of studies in the long term treatment of stroke after discharge from a stroke unit as well as putting the new study into context of the authors' previous research. The authors previously studied patients at one and four years after stroke. They conclude that 'there have been no longitudinal studies of the effects of uninterrupted regular physical exercises in stroke patients from the acute phase up to one year after stroke'.

Method

This study was a longitudinal randomized controlled stratified trial. It differs from much physiotherapy research by attempting to be double blind: neither investigator nor patients knew to which group the patients were being allocated. However it is not clear to what extent the patients in the exercise groups were blinded to which group they had been allocated. The subjects were aware that there would be differences in intensity of physiotherapy within the groups.

The subjects were patients with first ever stroke discharged from the same acute hospital after having received the same type of inpatient rehabilitation. Stratification was by gender and by hemisphere lesion. There were 35 patients in the intensive group and 40 in the regular exercise group and no significant differences between the groups regarding age, hemisphere lesion, marital status or length of stay on the stroke unit. MAS, Barthel and grip strength were all higher in the regular group but these differences were not significant.

Mean motor function at baseline as measured by the MAS was higher in the regular group (31.4) than for the intensive group (26.7). The Barthel was also higher at baseline in the regular group (66) than the intensive group (56.6). Grip strength was also higher in the regular group. However, these differences were not significant. Length of stay between the two groups was significantly longer for the intensive group at 22 days compared to 16 for the regular group. There was a greater improvement in MAS total score and Barthel total score in the intensive group from admission to discharge from the acute stroke unit; intensive group 7.5, regular group 1.7.

On discharge, rehabilitation for the intensive group was carried out by physiotherapists in the community who had agreed in advance to treat these patients to the intensive treatment protocol. These training protocols included high intensity exercise such as static bicycling, sit to stand practice and stair walking. Intensity was monitored by the Borg scale or heart rate. The regular exercise group received treatment if felt to require it but were not treated to any specific protocol. They did receive encouragement to maintain a high level of activity.

The intensive group had a minimum of 20 hours every third month during the study year. These sessions started immediately on discharge from the acute unit, two or three times a week if at home or daily if the patient was on a rehabilitation ward. The regular group had follow up physiotherapy treatment according to their needs as determined by the stroke unit staff or community teams.

Results

The patients had the MAS, Barthel, and grip strength measured by an 'experienced investigator' blinded to group allocation at admission, discharge from rehabilitation and three, six and twelve months after stroke. It is not mentioned whether this investigator was also a study author. A univariate analysis of variance (ANOVA) was used to compare the baseline to one year change in the outcome measures. The significance level was <0.05. The results are clearly set out and easy to understand.

Both exercise groups improved significantly from admission to three months in motor function, activities of daily living and grip strength as measured with the MAS, Barthel and Martin vigorimeter. Between three and six months improvement stabilised and there were no further significant improvements in either group.

Motivation in both groups was high with compliance 80% in the intensive group and 78% in the regular group. Both groups undertook approximately the same amount of exercise per week.

Discussion

To the authors knowledge, this is the first randomized controlled study to compare intensive exercise with regular treatment for patients in the year following their first stroke.

The authors feel that this improvement is because the reduction in secondary complications due to inactivity are minimised, allowing improvements to be due to spontaneous recovery and rehabilitation.

The similarity in the intensity of exercise between groups was felt to be due to the motivation of having test occasions and regular contact with a physiotherapist. The importance of supervision and social groups in exercise programmes for patients following stroke has also been suggested by other authors such as Olney et al (2006).

One exciting result was the maintenance and improvements in MAS, Barthel and grip strength results a year after stroke. These improvements were larger than the authors' 2003 study of patients who received little or no treatment after stroke, and to the authors' knowledge, have not been found in other studies.

The authors conclude that 'after initial rehabilitation following stroke, planned regular exercise continued over one year leads to a greater improvement in motor function than treatment "as required"'. I feel the results are not clear enough to demonstrate this. Using the mean MAS results, the only time the intensive group improved significantly

over the regular group after discharge from rehabilitation was between six months and one year: intensive group mean MAS 1.2 and regular −0.7 (p=0.02).

Conclusion

This study has much to interest physiotherapists working with stroke survivors after discharge from acute rehabilitation. It demonstrates the importance of supervised exercise in maintaining and improving function, and that physiotherapist led follow-up programmes are as beneficial as a compulsory exercise programme. It is encouraging to note the high level of compliance and motivation for exercise in the subjects. This study has a clear design and the use of familiar outcome measures and statistics meant that it is easy for clinicians to understand. The treatment protocol appeared relevant and similar to treatments offered to this group of patients in the UK. The use of a large group of physiotherapists in many different settings to treat the subjects as part of a research project appears interesting as a way to design future studies in this area.

References

The reference list is appropriate for a study of this type.

COURSE

24 hour postural management of the adult neurological patient

Reviewed by **Alison Burns** clinical specialist physiotherapist, Farnham Hospital, Surrey PCT (SW locality) and **Kate Moffatt** senior physiotherapist, Godwin rehabilitation unit, Surrey PCT (SW locality)

This was the second year this study day course had been run within the south west locality of Surrey PCT. Expanded from the previous years' programme, it incorporated multi-disciplinary speakers from within the PCT. After an initial session defining postural management regime, lectures included the medical management of increased tone, posture and seating, and the effects of splinting and passive stretches. In addition to the previous year, speakers also covered the topics on the effects of posture on swallow and communication, tissue viability and funding of long term disability.

This course was well received by the multi-disciplinary participants, who attended from acute, primary care and social care settings. It highlighted the need for well planned and pro-active postural management regardless of the locality of the patients. The use of case studies at the end of the day assisted in combining many of the points that had been raised throughout the day, with time for questions and discussions around current practice.

With the ever growing population of community dwelling adults with long term neurological disease, the course raised awareness of the importance of delivering timely interventions, the need for integrated working and a greater understanding of the roles of other disciplines in optimising care.

We will be running this course again next year, using a similar programme.

REGIONAL REPORTS

East Anglia

Nic Hills

Over the last few months we have been surveying the East Anglia ACPIN members to gain feedback on what they wanted from ACPIN at a regional level. Thank you to everyone who took the time to complete the questionnaire, the results can be seen on page 27. We really value the feedback and will use the responses to plan future courses. If anyone has yet to complete the survey, we will still welcome your replies.

Following the feedback from the questionnaire we have planned the following courses;

- April *Half day Spasticity course and AGM* Norwich and Norfolk Hospital
- June *Saboflex course* ICANHO, Suffolk
- September *Lycra and Ataxia*

As I touched upon in my last report, we are trying to get East Anglia ACPIN back on the map. As the region covers a large geographical area, we thought it would be useful to have a representative from each area within the region to aid communication and dissemination of information. If you are interested in this role please get in touch, I look forward to hearing from you.

Kent

Janice Champion

We have had another good year with membership numbers staying high for Kent and therefore our committee has been strongly supported led by Cathy Kelly-Jones, our chairperson.

Our 2008 programme started with the AGM 'Understanding Neuromuscular Disorders' which was held in March at Medway Maritime Hospital, Gillingham. We tried a different format this year and started at 3:30pm followed by the AGM. We had a fascinating talk by Dr Michael Rose MD FRCP, consultant and honorary senior lecturer in neurology, Kings College Hospital, London and Joanna Reffin, senior I physiotherapist, Muscle Clinic, also from Kings College Hospital, London.

This was well attended and attracted therapists from other specialities as well as ACPIN members.

Our plans for 2008 include a study day on 'Managing the post-neurosurgical patient in a district general hospital' which is scheduled for April and we are planning a 'Vestibular rehabilitation' study day in conjunction with our neighbouring Sussex region in June. This will be a practical and theoretical day and give participants a chance to see the posturography equipment at Medway Balance Clinic.

Any ideas from members for future courses are always welcome.

London

Leigh Forsyth

2007 has been another strong year for the region, both London ACPIN and the committee have a healthy membership and thanks to the new membership database from National ACPIN it has made it easier to contact all of our members than before. This has led to us establishing one email address (londonacpin@googlemail.com) so that all course queries can be directed to one place throughout the year so gone are the days of chasing after one person for course enquiries! The majority of feedback we have been getting is positive however, if this isn't the case and you are experiencing problems then please do let us know. We have been using iCSP more to advertise our courses and we are also planning to use the improved ACPIN website to hold details of the ongoing annual programme.

Last years program was a combination of evening lectures and study mornings which were very well attended, topics included 'Transition towards successful stroke management' by Dr Fiona Jones; 'Getting through and getting on – feedback and practice for stroke patients' by Dr Paulette Van Vliett; a fantastic evening of lectures, debate and wine to commemorate Sue Edward's retirement from teaching and a fantastically well attended evening lecture on 'Musicians Dystonia'.

We have been planning an exciting schedule for 2008 the most up to date version is available on the ACPIN website (acpin.net) and we will continue using iCSP for regular reminders and post or email at the start of the year. Thanks for all of your support and please let us know of any topics you would like covered or any general comments via the feedback forms at the lectures.

We would like to welcome our newest committee member Susanna Nielsen from Kings College Hospital to the London committee and we wish you all of the best for the coming year!

Manchester

Helen Dawson

Happy belated new year from Manchester ACPIN.

Thank you to all the speakers and everyone involved for their hard work to create a successful programme for the region in 2007.

With a strengthened committee we have planned an exciting programme for 2008 following a successful start to the year with a popular Vestibular Rehab. lecture by Nova Mullin.

The rest of this year's programme looks like this!

- May *Gym ball session*
- July *MS- focus on cognition and fatigue*
- September *Splinting day course*
- November *Open forum for questions/discussion with wine and cheese*

New committee members are always welcome so if you have an interest in joining us or to get an idea of what we do please get in touch.

If you any questions/comments/feedback let us know by email at: acpinmanchester@yahoo.co.uk

Northern Ireland

Joanne Wrigglesworth

NI ACPIN continues to be a dynamic and stimulating group with a good membership base from around the province. A huge thank you must go out to our retiring committee members, Siobhan MacAuley (retiring Chair) and Maire Kerr (retiring Treasurer) for their hard work and enthusiasm over a number of years. Congratulations to one of our 'career break committee members', Jane McKeown, on the birth of her son. By the time this goes to press, we hope to have recruited to our committee; however, interest in joining us at any time of the year is always gratefully received!

And now to business! Our 2007/2008 programme continues to be well attended, with monthly lectures on a variety of topics, including the management of chronic pain and a very informative evening spent in our local gait laboratory. Our AGM and review of Spasticity and Botulinum Toxin, followed by light workshops on driving and disability, gym ball activity and Parkinson's disease complete the programme.

NI ACPIN has funded a place for both our regional representative and another member to attend the ACPIN national acquired brain injury conference. As a committee, we continue to assess the budget and attempt to provide assistance through the running of reduced price courses or assisting with funding where applicable.

Finally, we are beginning to collate ideas for the 2008/09 programme, both for the format and titles/speakers. Any ideas are always received with great delight! Many thanks for another good year, enjoy the summer break and we look forward to seeing you in September.

Northern

Pam Thirlwell

As you read this the ACPIN programme for 2008 will be well underway. On January 24th we had an evening lecture about the 'Rheastim FES cycling system' which was held as Chase Park Health Club. This involved a patient demonstration of the equipment which was well attended and thought provoking.

On February 23rd/24th we held an excellent 'Hydrotherapy in neurology' course at James Cook University hospital. The tutor was Alison Skinner. The course went well and as usual we had an AGM by stealth luring people in with a free lunch. We welcomed new committee members Gillian Scott, Emma Robinson, Rosie Simms and Heidi Miller

Further plans for the year definitely include

- 13/14th September *On the ball* course with Joanne Elphinston

Other ideas for courses include:

- Autumn *Spasticity and spasticity management*
- July (possible) *Musculoskeletal techniques for neurophysiotherapists*
- July (possible) *Movement science course*
- *Bobath course* – planned for late 2008 or early 2009 actual topic and venue TBA

We plan to send out flyers of the full programme once we have more dates confirmed

Thank you to all the committee who continue to work hard arranging all the courses. Please let us know if there are any courses you would like arranged or if anyone would like to join the committee we are always happy to have new members.

OXFORD

Sophie Gwilym

Oxford region have enjoyed good attendance at a varied programme of evening lectures and courses with topics including thrombolysis in stroke, incomplete spinal cord injury and functional neurological disability. We would like to thank our speakers and also our attendees whose comments, questions and debate all add to the educational value.

The committee remains unchanged since the last edition of *Synapse*, however committee member Claire Harris is now Claire Clarke. Congratulations to Mrs Clarke!

Forthcoming programme

- 6th May 7.15pm *SaeboFlex* at the OCE
- June 14th *Pain, the brain and the real world* with Lorimer Moseley, Nuffield Orthopaedic Centre, Oxford. A one day course covering up to date pain theory and physiology, discussing treatment strategies and explaining concepts such as CNS hardwiring and neuropathic pain – all this with reference to the neurological patient!
- July 17th 6.00pm *Summer social* punting, Cherwell Boathouse, Oxford, followed by meal.
- August – summer break!
- September 5th and 6th *Ataxia*, Pam Mulholland. Two day course.
- October 15th *Cognitive changes in MS*, Dr Rachel Tams Psychologist, OCE

We welcome any volunteers for our committee, ideas and suggestions for talks and are also looking for additional venues to host lectures. Feel free to contact us informally to discuss further.

SCOTLAND

Lindsay Masterton

2007 was another good year for Scottish ACPIN with a varied range of courses/speakers. Membership numbers remain healthy at about 78 however we do have spaces on the committee so do contact me if you are interested.

Forthcoming programme

- April 23rd AGM and *Exploring the Brain* Dr Gilie McNeill in Glasgow
- August 23rd Pauline Pope on *Positioning and Seating with Neurological Patients*. Edinburgh
- September 27th *Neurophysiotherapy Research Forum Stirling*. Panel including Mark Smith, Jackie Morris, John Dennis and June Lawrie. More speakers to be confirmed. Opportunities for questions , discussion groups etc.
- October 25/26th Debbie Strang (Bobath tutor) *Trunk and Shoulder* Raigmore Hospital.

Further details about the above courses will be included in a newsletter together with other local news.

Surrey and Borders

Kate Moffatt

Firstly, thank you for all your support over the gloomy winter months! We have yet again had a successful year with high membership numbers and an enthusiastic committee. Anna Dunkerley has settled into the role as chair very well and the committee continues to work at providing an innovative and extensive list of evening lectures throughout the year.

By the time this issue of *Synapse* is published we will have had 'The neurological foot' study day and our annual AGM. We hope to have a new wave of committee members joining us for this next year!

Many thanks to all of the speakers this year who have given us food for thought!

Forthcoming programme

- May *Fatigue management*
- July *Discharge from stroke physiotherapy*
- September *Robotics*
- October *Developments in the management of spinal cord injury and the influence on physiotherapy practise*.

All future events will be advertised in *Frontline* and on the ICSP website, so keep your eyes peeled!

Please do not hesitate to contact me with any querieson: ksmoff@hotmail.com

We look forward to seeing you all at future events!

Sussex

Clare Hall

We have had a varied programme of events with really good attendance, in spite of the current squeeze on study time and budgets. A big thank you to all the committee for their continued enthusiasm! We will continue to provide at least four events per year in different venues.

The autumn programme last year started with an absolutely fabulous day on 'Pilates in neuro' with Jo Kilmore (senior physiotherapist), at Southlands Hospital, on October. The background to the PEAK Pilates approach was given using theory and practical sessions. Clear information and discussion about how to safely use this in the neurological patient population was also covered.

In November there was a 'Feedback Session' by two senior physiotherapists from the 2007 ACPIN conference on 'Balance', and from a study day in Southampton on 'Parkinsons disease'.

Forthcoming programme

- April *Interpretation of MRI/CT scans* evening lecture, Firwood House, Eastbourne. Details TBC.
- Summer *Vestibular study day*, joint event with Kent ACPIN. Details TBC.
- Autumn *Effects of exercise following TIA*, Margaret Hewett, Clinical Specialist in Neurology, Conquest Hospital.

We are always seeking further ideas for topics, speakers and venues. Please let us know about your wishes for next year's programme: contact details are on the website.

Wessex

Mary Vincent

After a successful year in 2007, with a well attended programme Wessex committee are hoping to continue to organise monthly evening lectures throughout 2008. We also hope to organise a two day Pilates course in September/November, which of course will be discounted to our members.

Forthcoming programme

- May 20th *Talk on thrombolysis*, Bournemouth
- June 24th *Talk on new drug developments in MS*, Poole

Please look out for advertising flyers nearer the time for exact speaker, time and venue details.

Thank you to all the committee for their hard work in organising events. The Wessex Committee largely remains unchanged, with Jenny Baker as Chair, Marjon van Wees as Secretary and Heather Ross as Treasurer. Due to me commencing maternity leave in April I would like to thank Hayden Kirk who has kindly offered to take on my role as regional representative in my absence.

Lastly, a big thank you to all the regional members who support our events, we hope you continue to support us throughout 2008.

West Midlands

Fiona wallace

West Midlands ACPIN Membership has remained strong in 2007 with over 100 members. The committee continues to be active with about ten regular attendees. Louise Nichols our membership secretary has moved to pastures new and on behalf of the committee I would like to say a huge thank you for all her hard work.

In November 2007 we welcomed Alison Skinner to Good Hope Hospital for a hydrotherapy course which was extremely well received. The 2007 programme then drew to a close in December with Carron Sintler presenting an evening lecture on the new national stroke strategy.

The 2008 Course Programme was kick-started in February at Birmingham Heartlands Hospital. Dr Sandler presented an evening lecture titled 'Shaping Stroke services' at the regional AGM, this was well attended and very informative.

We are currently busy organising this year's courses and meetings, which will include the long awaited PNF Course in September with Niki Rochford at Birmingham Heartlands Hospital. All events will be advertised directly to ACPIN members by post or email.

If you are interested in becoming a committee member or have any suggestions for topics or speakers please feel free to contact me via email. fiona.wallace@heartofengland.nhs.uk or telephone on 0121 424 2867.

Yorkshire

Jill Fisher

The Yorkshire ACPIN programme had been very well supported over the last few months by members and non members. People from a number of disciplines attended the evening talk I gave in October 'Managing people with severe neuro-disability in the community'.

In November Denise Ross gave a very interesting talk describing an innovative and exciting approach to physiotherapy stroke assessment being developed in some Leeds Hospitals. In early December it was good to welcome back Debbie Neil to talk to us about her role as a consultant physiotherapist and 'Enabling self-management'.

On February 23rd Mary Lynch-Ellerington led a study day on 'Functional recovery of the hand'.

On 13th of March Professor Bhakta, Sophie Makeover and Jane Savage gave a talk on 'The development of an intelligent robotic system to aid physiotherapy in stroke'. The AGM will be on 19th April combined with a day course related to gait. Sarah Daniels will be leading a workshop, and an orthotist will be presenting some research he has done related to the use of ankle foot orthotics.

Other events in the pipeline include Dr Duffy talking on 'Dystonia' and Dr Amanda Stroud on 'Practical strategies for behaviour management'. Debbie Strang on August 15th will be leading a day course on 'The shoulder' and Janice Champion on 25th September will be the tutor for a course with special emphasis on handling during assessment and treatment in the context of the hospital setting.

The email address seems to be helpful for aiding communication with the committee members: yorkshireacpin.@yahoo.co.uk.

LETTERS

Dear Colleague,

In March 2007 we published a letter in *Synapse* requesting contributions of abbreviations used in neurological physiotherapy to enable us to compile a standardised list of abbreviations to be used at a local level. This was following a physiotherapy notes audit for neurology inpatients that highlighted inconsistencies in terms and abbreviations used between therapists. The list of abbreviations is now completed and in use in our trust. It will be used as the standard for abbreviations in the next audit of physiotherapy notes. If you would wish to receive a copy for your own reference then it is available by contacting myself.

Many thanks to the individuals who contributed their own lists of abbreviations.

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GUIDELINES FOR AUTHORS

***Synapse* is the official newsletter of ACPIN. It aims to provide a channel of communication between ACPIN members, to provide a forum to inform, instruct and debate regarding all aspects of neurological physiotherapy. A number of types of articles have been identified which fulfil these aims. The types of article are:**

Case Reports
Synapse is pleased to accept case reports from practitioners, that provide information which will encourage other practitioners to improve or make changes in their own practice or clinical reasoning of how to influence a change or plan a treatment for that condition. The maximum length is 2000 words including references. An outline is given as follows:

Introduction
State the purpose of the report and why the case is worth reading about to include in short sentences:
- The patient and the condition.
- How the case came to your attention.
- What is new or different about it.
- The main features worth reporting.

The patient
Give a concise description of the patient and condition that shows the key physiotherapeutic, biomedical and psychosocial features. The patient's perspective on the problem and priorities for treatment are important. Give the patient a name in the interests of humanity, but not the real name. Do not include any other identifying details or photographs without the patient's permission.

Intervention
Describe what you did, how the patient progressed, and the outcome. This section should cover:
- Aims of physiotherapy.
- Treatment, problems and progress.
- Outcomes, including any changes in impairment and disability.
- Justification of your choice of treatment; clinical reasoning
- The patient's level of satisfaction and the outcome and the impact on quality of life.

Method
This should clarify what intervention took place and what measurements were taken. It should include:
- Description(s) of outcome measures used and reference
- Interventions carried out (where, when, by whom if relevant)

Implications for practice
Discuss the knowledge gained, with reference to published research findings and/or evidence about clinical effectiveness. For example:
- Outcome for the patient.
- Drawbacks.
- Insights for treatment of similar patients.
- Potential for application to other conditions.

Summary
List the main lessons to be drawn from this example.

References
These should be in the Harvard style (see section on 'Measurements' below).

Further guidelines for writing case reports were published in the Spring 2001 issue of *Synapse*, page 19.

Abstracts of thesis and dissertations
Abstracts from research projects, including those from undergraduate or postgraduate degrees, audits or presentations. They should be up to 500 words and where possible the conventional format: introduction, purpose, method, results, discussion, conclusion.

Audit Report
A report which contains examination of the method, results, analysis, conclusions and service developments of audit relating to neurology and physiotherapy, using any method or design. This could also include a Service Development Quality Assurance Report of changes in service delivery aimed at improving quality. These should be up to 2000 words including references.

Review of Articles
A critical appraisal of primary source material on a specific topic related to neurology. Download the ACPIN information sheet Reviewing research articles for further guidance from the ACPIN website.

Product News
A short appraisal of up to 500 words, used to bring new or redesigned equipment to the notice of the readers. ACPIN and *Synapse* take no responsibility for these assessments, it is not an endorsement of the equipment. If an official trial has been carried out this should be presented as a technical evaluation. This may include a description of a mechanical or technical device used in assessment, treatment, management or education to include specifications and summary evaluation.

Review of books, software and videos
Short reviews of up to 500 words to include details of availability, price and source for purchasing.

Letters to Synapse
These can be about any issue pertinent to neurological physiotherapy or ACPIN. They may relate to material published in the previous issue(s) of *Synapse*.

PREPARATION OF EDITORIAL MATERIAL

Copy should be produced in Microsoft Word. Wherever possible diagrams and tables should be produced in electronic form, eg Excel, and the software used clearly identified.

Hard copies should be as close to journal style as possible, on one side of A4 paper with at least a 25mm margin all around, consecutively numbered.

The first page should give:
- The title of the article
- The names of the author(s)
- A complete name and address for correspondence
- Professional and academic qualifications for all authors, and their current positions
- For research papers, a brief note about each author which indicates their contribution and a summary of any funds supporting the work

All articles
- The text should be well organised and written in simple, clear correct English. The positions of tables, charts or photographs should be appropriately titled and numbered consecutively in the text.
- All abbreviations must be explained.
- Any photographs or line drawings should be in sharp focus with good contrast for best reproduction.
- All charts should be in black and white only and captions should reflect this.
- References should be listed alphabetically, in the Harvard style with punctuation as follows: Bloggs A, Collins B (1998) The use of bandages in treating head injuries Physiotherapy 67,3 pp12–13.
- In the text, the reference should be quoted as the author(s) names followed by the date: Bloggs A (1994)
- Acknowledgements are listed at the end.

Measurements
As the International System of Units (SI) is not yet universal, both metric and imperial units are used in the United Kingdom in different circumstances. Depending on which units were used for the original calculations, data may be reported in imperial units followed by the SI equivalent in parentheses, or SI measurements followed by imperial measurements in parentheses. If the article mentions an outcome measure, appropriate information about it should be included, describing measurement properties and where it may be obtained.

Permissions and ethical certification
Protection of subjects: Either provide written permission from patients, parents or guardians to publish photographs of recognisable individuals, or obscure facial features. For reports of research involving people, written confirmation of informed consent is required. The use of names for patients is encouraged in case studies for clarity and humanity, but they should not be their real names.

Submission of articles
The disk and two hard copies of each article, should be sent with a covering letter from the principal author stating the type of article being submitted, releasing copyright, confirming that appropriate permissions have been obtained, or stating what reprinting permissions are needed.

For further information, please contact the *Synapse* co-ordinator:
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Note: all material submitted to the administrator is normally acknowledged within two weeks of receipt.

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