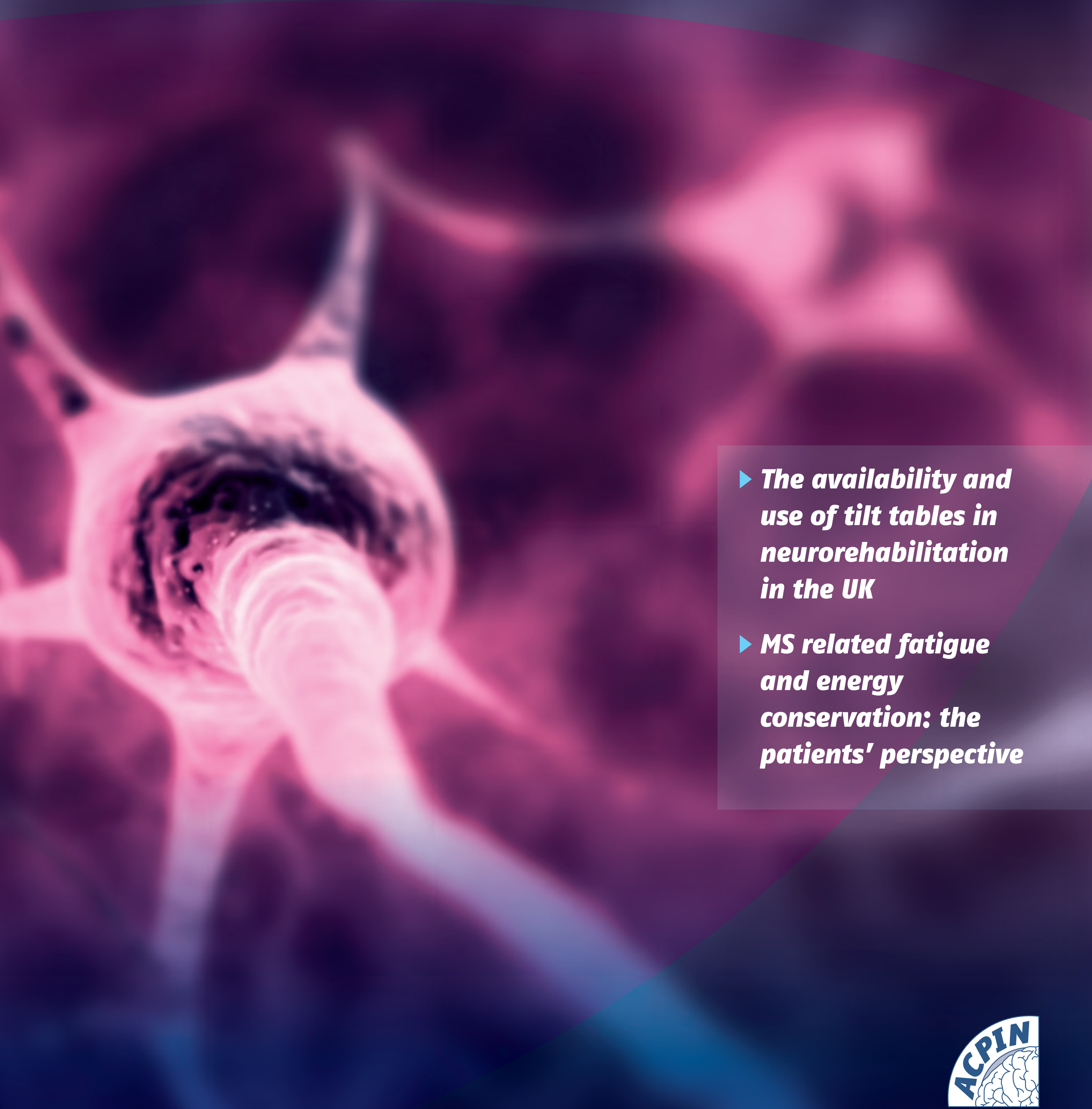
Syn'apse

Autumn/Winter 2011



- ***The availability and use of tilt tables in neurorehabilitation in the UK***
- ***MS related fatigue and energy conservation: the patients' perspective***

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

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Syn'apse

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ACPIN'S AIMS

1. To promote and facilitate collaborative interaction between ACPIN members across all fields of practice including clinical, research and education.
2. To promote evidence informed practice and continuing professional development of ACPIN members by assisting in the exchange and dissemination of knowledge and ideas within the area of neurology.
3. To provide encouragement and support for members to participate in good quality research (with a diversity of methodologies) and evaluation of practice at all levels.
4. To maintain and continue to develop a reciprocal communication process with the Chartered Society of Physiotherapy on all issues related to neurology.
5. To foster and encourage collaborative working between ACPIN, other professional groups, related organisations ie third sector, government departments and members of the public.

FROM THE CHAIR

Welcome to the Autumn 2011 edition of *Synapse*!

I have just returned from the CSP conference in Liverpool and like any stimulating conference it provoked thoughts, ideas and questions!

On reflecting on the conference I feel motivated by all the wonderful research being undertaken and the drive to be able to incorporate this into the clinical setting. I was impressed as I chatted with the other delegates to hear how positive and enthusiastic clinicians/educationalists are, considering that they are often working in under resourced facilities. The dedication of neurophysiotherapists is overwhelming.

But as I write this on a cold wet miserable day (as typical for Northern Ireland) my overall feeling is similar to the weather! It is a time of tremendous change ahead, a time of uncertainity in terms of job security, pensions provision and the future of the NHS. The news is full of the health and social care bill, to go before the House of Lords for discussion this week. With the biggest shake up ever predicted for the NHS will those with neurological and other long-term conditions slip even further down the priorities?

Likewise within the CSP with the streamlining of the CSP clinical interest groups into the six alliances we have to work harder at making sure our voice is heard! ACPIN and ACPIVR stand alone in the neuroscience alliance but are endeavouring to maintain our presence alongside the larger alliances eg, the neuromusculoskelatal alliance.

We look forward to seeing you all at our 2012 conference ... and even that is changing a little! We are going to have breakout sessions, opportunities to plan your CPD, a host of fabulous speakers and a wide range of exhibitors.

So, change can be good! It makes us look at ourselves, assess our impact, refocus and move forwards!

Siobhan MacAuley

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The availability and use

of tilt tables in neurorehabilitation in the UK

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There is a consensus that 'early mobilisation', ie getting out of bed within 24 hours of onset of symptoms after stroke (Bernhardt *et al* 2008), is safe and beneficial for patients in order to improve functional outcomes, improve cognition and perception, reduce length of stay and prevent secondary complications including pressure sores and contractures (Brahmbhatt *et al* 2010, Mazaux *et al* 2001, Symons 2008).

In the neurological setting patients often require substantial help to begin early mobilisation. The tilt table is one way to

> "…reintroduce patients to the vertical position when they are unable to stand or mobilise safely even with considerable assistance…" (Webber and Pryor 1993)

but few studies have directly investigated its use for early mobilisation. Its utility for other outcomes, such as ankle range of movement (ROM) has shown modest improvements of 3° to 17° (Bohannon *et al* 1985; Ben *et al* 2005). There is some discussion about whether this positive outcome using a tilt table is maintained (Richardson 1991; Robinson *et al* 2008) or if it is any more beneficial than wearing night splints (Robinson *et al* 2008). Some studies have shown that tilt tables can be used to reduce postural hypotension, particularly when combined with a passive stepping mechanism (Colombo *et al* 2005; Luther *et al* 2008). Other studies have shown that the tilt table can increase arousal in minimally conscious patients (Colombo *et al* 2005; Symons 2008). The tilt table appears to be rarely used as a method of early mobilisation with other techniques such as sit to stand and marching on the spot being favoured (Malouin *et al* 1992; Chang *et al* 2004). Generally, the research conducted to date has small sample sizes and is of variable quality making it difficult to draw definitive clinical conclusions about indications for use, dosage of treatment and expected outcomes.

Whilst further research is required to evaluate the use of the tilt table in neurological rehabilitation, it is important to gain an understanding of the current availability and use of tilt tables. The aims of this survey were therefore to determine:

1. Physiotherapists' access to tilt tables in UK neurological rehabilitation environments,
2. The frequency of use of tilt tables in neurological rehabilitation settings and
3. The indications for use of the tilt table with neurological patients.

METHOD

Questionnaire design

Informal discussions with clinical colleagues working in neurological rehabilitation at Guy's and St Thomas' NHS Foundation Trust, a large urban secondary care UK teaching hospital, was undertaken to acquire a consensus of opinion for themes in the survey. A questionnaire which combined closed response and multiple choice questions was then drafted by one of the authors (HM). The questions were revised by the second author (GJ) before the final draft was agreed between the authors.

The questionnaire asked for demographic information in order that we could describe our sample. Respondents were asked whether they had access to a tilt table, how frequently they used it and the position in which patients were placed on the tilt table (ie supine/prone/side lying). Respondents' perceived clinical benefits of tilt tables were determined by ranking nine criteria, based on results from a literature review (see *Table 1* overleaf), in order of importance. Then they were asked to state the frequency of use of each criterion using a three point Likert scale with

SEARCH DATABASES	SEARCH TERMS	EXCLUSION CRITERIA	DATES ACCEPTED	RESULTS
AHMED EM-BASE CINAHL MEDLINE	Tilt table tilting table CVA stroke hemi-paresis brain injury head injury TBI cerebral infarct cerebral haemorrhage SCI	Non-English articles	1985 to present day	Nine papers found: **Two RCTs:** • Ben *et al* 2005 • Robinson *et al* 2008 **Two case series:** • Bohannon *et al* 1985 • Colombo *et al* 2005 **Two case studies:** • Richardson *et al* 1991 • Colombo *et al* 2005 **One survey:** • Chang *et al* 2004 **Three pilot studies:** • Malouin *et al* 1992 • Luther *et al* 2008 • Symons *et al* 2008

Table 1 ***Details of literature review***

descriptors 'used often', 'sometimes used', 'never used'. A final open ended question asked respondents to describe a typical tilt table treatment session.

SUBJECTS

Delegates at the 2011 ACPIN national conference were invited to complete the questionnaire, representing a convenience sample of UK physiotherapists working in the field of neurological physiotherapy.

DATA ANALYSIS

All data were categorical and analyses of non-parametric data were used. Categorical responses were summarised using rates and proportions. Pearson Chi-squared tests were used to show the generalisability of our sample as compared with the ACPIN register of current members with respect to gender, region of practice and type of practice. The uses of tilt tables across subgroups (region and practice) were assessed using Fisher's exact test, used instead of the Pearson Chi-squared test here due to some low sample rates across categories. Ranks of indications/benefits were summarised as the median ranking value (inter quartile range). The median rankings of the nine benefits of tilt table use were compared using the Kruskall Wallis test. Analyses were carried out using STATA 11ME (STATA corp). All statistical significance was set at probabilities $p < 0.05$.

RESULTS

Out of 165 delegates 93 volunteers returned the questionnaire – a response rate of 56%. Most were female (87, 94%) and the mean age was 40±9 (±SD) years. All returned questionnaires were analysed, four were returned with incomplete ranked responses for benefits of tilt table use but contributed to all other analyses. All respondents were current practicing clinicians.

The sample included volunteers from major regions of the UK, the majority (59, 63%) practiced in the South of England, 29 (31%) in the North and Midlands, and 5 (5%) from the rest of the UK. Agenda for Change band 7 (B7) or equivalent represented the largest group by grade (44, 48%) with B6 (33, 36%), B8 (12, 13%) and B5 (3, 3%) representing the other grades in order of decreasing frequency. Of all respondents, 60 (65%) worked with inpatients, 21 (23%) worked in the community and twelve (13%) in outpatients.

We compared our sample to the register of ACPIN members as of June 2011 ($n = 2259$) with non-clinical members and non-UK practitioners removed, leaving a population for comparison of $n = 2055$. Clinicians' gender, practice region and type of practice were not found to be statistically different to our sample indicating it is likely to be representative of ACPIN members. Age or grade data was unavailable for comparison. Sample and population data are summarised in *Table 2*.

In our sample, 61 clinicians (66%) had access to a tilt table. The availability of tilt tables was consistent across regions of practice (Fisher's exact test $p = 0.302$) but there were significant differ-

		SAMPLE	ACPIN	*p*	sig
	n	93	2022	–	–
Age	Mean (SD)	40 (9)	–	–	–
Grade	B5	3 (3%)	–	–	–
	B6	33 (35%)	–	–	–
	B7	42 (45%)	–	–	–
	B8	15 (16%)	–	–	–
Gender	female	87 (94%)	1876 (91%)	0.448	ns
	male	6 (6%)	179 (9%)		
Region	South Eng	59 (63%)	1139 (55%)	0.236	ns
	North & Mid Eng	29 (31%)	717 (35%)		
	Other UK	5 (5%)	199 (10%)		
Practice	Community	21 (23%)	438 (21%)	0.361	ns
	Inpatients	60 (65%)	1230 (60%)		
	Outpatients	12 (13%)	387 (19%)		

ns = not significant

Table 2 **Population and sample characteristics**

ences when type of practice was accounted for (Fisher's exact tests p < 0.001) with those working in inpatients having most access proportionally to a tilt table.

Table 3 summarises the frequency of tilt table use. Only two stated they did not use it despite having access to it and three respondents failed to indicate their frequency per patient per week. 32 respondents (52%) stated they use a tilt table with one to five patients a year. Respondent rates for the other per year patient frequencies were equally spread; 11 (18%), 8 (13%) and 8 (13%) respectively for rates of 6-10, 11-15 and >15 patients per year. Nearly half (29, 48%) indicated they chose to utilise tilt table treatment two to three times per week per patient, the next highest frequency was once weekly (16, 26%) and two respondents (3%) stated they used it for assessment only once during a patient episode.

		No	(%)
No of patients per year	0	2	(3%)
	1–5	32	(52%)
	6–10	11	(18%)
	11–15	8	(13%)
	>15	8	(13%)
	Total	**61**	**(100%)**
No of treatments per patient per week	1 x	16	(26%)
	2–3 x	29	(48%)
	4–5 x	7	(11%)
	1 only	2	(3%)
	other	4	(7%)
	no data	3	(5%)
	Total	**61**	**(100%)**

Table 3 **Frequencies of tilt table use**

Clinical benefits were ranked for 57 of the 61 respondents (93%). The median ratings are summarised in *Table 4*. Data were omitted by one respondent for some of the benefits.

There was significant difference in the rankings across the nine clinical benefits (Kruskal-Wallis chi-squared = 139.395, df = 8, p < 0.001) with lower limb weight-bearing the most favourably ranked benefit, and leg exercises the least highly ranked. The numbers were too small to complete further multivariate analysis. There was an association between those benefits ranked the highest and their corresponding frequency of use; the ranks vary significantly dependent on how regularly it is used (often, sometimes, never; chi-squared with ties = 222.837 with 2 df, p = 0.0001) and is summarised below in *Figure 1*.

CLINICAL BENEFIT	RESPONDENTS	MEDIAN	(IQR)
Leg weightbearing	57	1	(1–3)
Range of movement	57	2	(1–3)
Tone management	56	4	(3–6)
Arousal	56	5	(3–7)
Muscle strengthening	56	5	(4–7)
Hypotension management	57	5	(3–8)
Psychological wellbeing	56	6	(4–7)
Manual handling risk management	56	7	(3–8)
Leg exercises	57	7	(6–9)

IQR = Interquartile range

Table 4 **Clinical benefits of tilt table use: ranked in order of preference**

Regularity	Median rank	(IQR)	*p*
Often	2	(1–4)	<0.001
Sometimes	5	(4–7)	
Never	9	(8–9)	

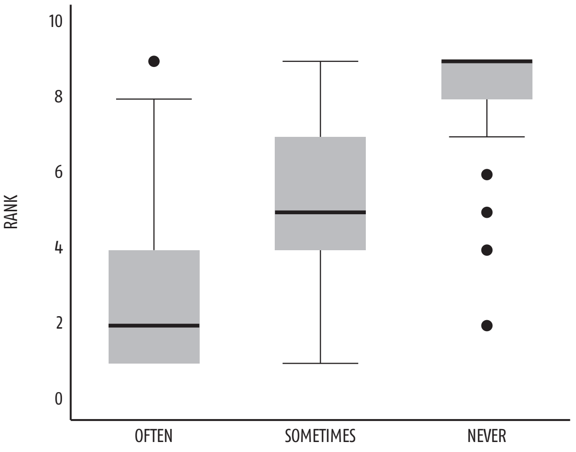

Figure 1 **Table and box plot showing association of frequency and ranking of tilt table use for clinical benefits**

All 61 respondents used the tilt table with patients in supine. Five of the 61 (8%) utilised other treatment positions in addition to supine: two respondents put patients in prone, one utilised bilateral side-lying, one utilised side-lying on patient's hemiplegic side and one respondent reported utilising all positions. Typical treatment sessions reported including both upper and lower limbs exercises. Strengthening was a common theme with lower limb treatment and 'functional tasks' was the popular response for upper limb interventions. No further qualitative analysis was undertaken with these data.

DISCUSSION

This study has shown that more than half of physiotherapists in the sample have access to tilt tables, particularly in an in-patient setting.

The findings of this study are comparable to a previous survey (Chang *et al* 2004) of 86 senior physiotherapists working in an intensive care unit (ICU) in Australian public adult hospitals. This survey was chosen for comparison because it most closely matched the aims of the present study, however it is recognised that there are limitations to this comparison as the country and patient group are different. Of the Australian physiotherapists 67% had access to a tilt table which is comparable to our generalisable sample of UK neurological physiotherapists where 66% reported access. Five of the top six benefits were in agreement in our sample compared to Chang *et al* (2004): lower limb weight bearing, ROM / contracture prevention, tone management, lower limb strengthening and arousal. There also appears to be some consensus between these stated reasons for tilt table use and the documented evidence found during the literature review. The following criteria were stated as important by both: ankle ROM maintenance, arousal and hypotension management. However the question in the current survey regarding benefits of the tilt table was multiple choice format. There was therefore no opportunity for respondents to discuss other reasons for tilt table use. We acknowledge this question did not allow for more expansive answers.

Our results differed to Chang *et al* (2004) in the number of patients for whom the tilt table was used. The Australian survey revealed that 94.8% used the tilt table with 0 – 5 new patients per month which, if extrapolated for annual rates, would be 0 – 60. In the current survey however the median annual frequency of use was 1 – 5 new patients per year. This difference in ICU use of tilt tables could be due to significant numbers of patients in the ICU being at risk of damage caused by prolonged mechanical ventilation and immobility contributing to secondary problems of decreased lung volumes, orthostatic intolerance, venous stasis (Adam *et al* 1999) and muscle dysfunction (DeJonghe *et al* 2002). An ICU represents a controlled environment where access to equipment might be culturally accepted and available. It is a distinct area where the prophylactic use of tilt tables has been advocated in the UK (AHP and ACS advisory Group 2002) for level three patients, and has been specifically described in the literature as a rehabilitative adjunct (Bourdin *et al* 2010, Chang *et al* 2004, Thomas *et al* 2002). In comparison we sampled neurological physiotherapists whose workplace included environments beyond critical care: inpatients, community and outpatients where patients' functional movement abilities and morbidities are likely to be vastly more variable.

There were some limitations to this study. Firstly the questionnaire was not piloted prior to distribution. This omission makes our questionnaire vulnerable to user interpretation variability. In addition we can not defend anything more than face validity for our choice of questions in particular the ranking of indications/benefits. Piloting would also have developed the operational nature of the questionnaire. For example respondents were requested to rank criteria in order of importance from 1 to 9, however some provided several criteria with the same ranking.

Secondly, the questionnaire was designed and results analysed by the same therapists. Ideally we would have invited independent members of staff to undertake this to reduce the risk of experimenter bias. Thirdly, we acknowledge that ACPIN membership may not be representative of neurological physiotherapists in the UK and furthermore those who chose to respond may have been only representative of physiotherapists most enthusiastic toward tilt table use. We did not attempt to implicitly derive information regarding tilt table use within a more generalizable subject and methodology.

Finally, although the questionnaire has provided some useful data, there are further questions that could have been asked regarding tilt table treatment (eg tilt angle, duration of treatment) which would have helped increase our understanding of current tilt table practice.

CONCLUSION

Many neurological physiotherapists in the UK have access to tilt tables, but use of this equipment can be infrequent. Supine appears to the preferred treatment position on the tilt table. Clinicians were in agreement with available literature and a previous survey, suggesting that the most beneficial use of tilt tables are for lower limb weight bearing, ROM maintenance, tone management, lower limb strengthening and arousal. Common treatment sessions while on the tilt table included upper limb functional tasks and lower limb strengthening.

Overall, the available evidence for use of tilt tables in neurological rehabilitation is limited. There are no formal guidelines as to use of tilt tables, and clinically they appear to be relatively underused, yet their availability is widespread. Further research into this area would be beneficial.

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REFERENCES

Adam S, Forrest S (1999) *ABC of intensive care: other supportive care.* British Medical Journal 319 pp175-178.

Adams HJ *et al* (2003) *Guidelines for the early management of patients with ischemic stroke: a scientific statement from the stroke council of the American Stroke Association* Stroke 34 pp1056-1083.

AHP and HCS Advisory group (2002) *The role of healthcare professionals within critical care service*s NHS Modernisation Agency pp16-17.

Ben M *et al* (2005) *Does 12 weeks of regular standing prevent loss of ankle mobility and bone mineral density in people with recent spinal cord injuries*. Australian Journal of Physiotherapy 51 pp251-259.

Bernhardt J *et al* (2008) *A very early rehabilitation trial for stroke (AVERT) phase II safety and feasibility* Stroke 39 pp390-396.

Bohannon RW, Larkin PA (1985) *Passive ankle dorsiflexion increases in patients after a regime of tilt table-wedge board standing* Physical Therapy 65 (11) pp1676-1678.

Bourdin G *et al* (2010) *The feasibility of early physical activity in intensive care unit patients: a prospective observational one-center study* Respiratory Care 55 (4) pp400-407.

Brahmbhatt N et al (2010)*Early mobilization improves functional outcomes in critically ill patients* Critical Care 14 p321.

Chang *et al* (2004) *Standing with assistance of a tilt table in intensive care: a survey of Australian physiotherapy practice* Australian Journal of Physiotherapy 50 pp51-54.

Colombo G *et al* (2005) *Novel tilt table with integrated robotic stepping mechanism: design principles and clinical application*. From: 9th International Conference on rehabilitation robotics, June 28th – July 1st 2005, Chicago, IL, USA.

De Jonghe B *et al* (2002) *Paresis acquired in the intensive care unit: a prospective multicentre study* Journal of the American Medical Association 288 pp2859-2867.

Diserens K *et al* (2006) *Early mobilisation after stroke: review of the literature* Cerebrovascular Diseases 22 pp 183-190.

Luther M *et al* (2008) *Comparison of orthostatic reactions of patients still unconscious within the first three months of brain injury on a tilt table with and without integrated stepping. A prospective, randomised cross-over pilot trial* Clinical Rehabilitation 22 pp1034-1041.

Mazaux JM *et al* (2001) *Early rehabilitation after severe brain injury: A French perspective* Journal of Rehabilitation and Medicine 33 pp99-109.

Richardson DLA (1991) *The use of the tilt table to affect passive tendo-achilles stretch in a patient with head injury* Physiotherapy Theory and Practice 7 pp45-50.

Robinson W *et al* (2008) *No difference between wearing a night splint and standing on a tilt table in preventing ankle contracture early after stroke: a randomised trial* Australian Journal of Physiotherapy 54 pp33-39.

Rybalko NV *et al* (2009) *Estimation of safety and efficacy application of the tilt-table erigo in acute stroke* Journal of Neurological Sciences 285 ppS179-S180.

Symons K (2008) *Standing enhances the behavioural repertoire of minimally conscious and vegetative state patients*. Advances in Clinical Neurosciences and Rehabilitation 7 (6) pp27-28.

The working group of the National Stroke Foundation (2003) *National Clinical Guidelines for Acute Stroke Management* Melbourne, Australia: National Stroke Foundation.

Thomas DC *et al* (2002) *Rehabilitation of the patient with chronic critical illness*. Critical Care Clinics 18 pp695-715.

Webber B, Pryor J (1993) *Physiotherapy skills: Techniques and adjuncts*. In Webber B and Pryor J (Eds): Physiotherapy for Respiratory and Cardiac Problems. Edinburgh: Churchill Livingstone pp113 – 173.

MS-related fatigue and energy conservation:

the patients' perspective

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Fatigue is one of the most common symptoms associated with multiple sclerosis (MS; Smith and Hale 2007). Although education about energy conservation is widely used in the clinical setting for the management of MS-related fatigue, research to ensure evidence-based practice is still limited (National Institute for Clinical Excellence 2004). Thus an exploratory randomised controlled trial (RCT; n = 23) was conducted in order to assess the impact of an energy conservation programme (ECP) on MS-related fatigue, quality of life and self efficacy in comparison to a peer support group (PSG). Subsequent focus groups were conducted in order to gain insight into the relationship between MS-related fatigue and the psychosocial variables of quality of life, depression, social support and self-efficacy as well as to obtain feedback on the ECP and PSG. This is a report of findings from the focus groups.

METHODS

Ethical approval

This was granted by the Office for Research Ethics Committee (Northern Ireland).

Participants – Collecting data

Participants who had previously taking part in an exploratory RCT were contacted after completion of the intervention phase to take part in the focus groups following informed written consent. A facilitator who had not been involved in the RCT guided the discussion during the focus groups using eight pre-determined questions derived from an extensive literature review and information researchers wished to explore (*Table 1*). A second moderator was also present to take notes during the focus groups.

FOCUS GROUP A
1. Please introduce yourself to the group?
2. Why did you decide to get involved in the study?
3. Which aspects of the Energy Conservation Programme, if any, were useful to you?
4. Which aspects, if any, were not useful?
5. Which aspects of the Energy Conservation Programme were new to you?
6. How are your mood and fatigue linked?
7. Has the Energy Conservation Programme changed the way you approach your everyday life? (New activities/difficulties)
8. What role, if any, have family/friends played in your intervention?

Table 1 ***Questions for focus groups***

Data analysis

An initial debriefing was conducted between the group facilitator and moderator after completion of each group in order to discuss any thoughts and feelings that my have emerged. Verbatim transcripts were typed from the audio taping of the focus groups; all participants were allocated a code number to ensure confidentiality. Data was analysed using a thematic approach (Gomm, 2004).

Results

Three focus groups were conducted with a total of nine participants. Focus Group A included two female participants who had received the ECP.

Three participants, two female and one male, who had also received the ECP were included in Focus Group B. Focus Group C was made up of four female participants who had received the PSG.

Two themes addressed participants' experiences with MS, the process of diagnosis and the problem of fatigue. Participants talked about the lengthy process of diagnosis and how they felt during that time, "Everything is really so wishy-washy with MS isn't it you know", "because we thought we were going mad" as well as the sense of relief once they had obtained a diagnosis, "yes, I think it was a relief … I said it's either MS or it's a benign tumour at the bottom of your spine … so it was a relief … it wasn't a tumour". Participants described specific practical problems they encountered during their daily routines which were mainly centred on leaving the house on their own, "I still absolutely dread going out. If I have to go anywhere I would still panic I would still worry". Some other problems participants discussed were more specific to women, "when you're a woman, you're just expected to go on", "I had one child before I had MS but I think having MS that put me off having any more of them". Participants also reflected about their experiences with fatigue, "it's like running on empty totally. You can't think, you know". They also discussed what factors affected their fatigue, "I get obviously get tired if I am cold", "it wipes you out the heat".

The third theme reflected on mood issues and their association with fatigue in MS; it revealed that the most predominant feeling was guilt, "I think my problem is guilt with fatigue…You know I feel guilty if (husband) and (son) come through the door and I'm sitting, if they go out and I happen to be sitting on the settee". Not being able to complete activities because of MS-related fatigue also led to feelings of frustration, "I would get cross and frustrated that I can't do what I want to do". Isolation was another emotion frequently described, "If I am tired I am just quiet".

The fourth theme was social support; participants described positive aspects of family and peer support, "the children have grown up with me as I am and they accept it", "my husband will sort of be pushing me to do things or whatever and I think that helps to spur you on".

Participants felt both the ECP and PSG had been beneficial and provided an opportunity for peer support, "it was just lovely meeting with others and seeing that they had the same symptoms as I had myself and just how others cope with MS". Participants also obtained practical information that helped them cope with MS and fatigue and felt more assertive in using some of the energy conservation strategies, "I think the posture session was the best", "to split things up and not do it all at once". However, participants found some difficulties with practice activities in the ECP and the implementation of some of the energy conservation techniques, "the homework you tend to leave it for a couple of days and then try to catch up on it probably", "I mean I think we were all aware about spacing out your day, that's great in theory until life comes into it, everyday life you know".

It was observed from participants' responses that one of the major factors for improvement appeared to be the participants' own level of motivation to deal with a condition they had suffered for a considerable length of time as well as their desire for independence and autonomy, "I think it is just a matter that you adjust your lifestyle. You can't beat it you have to work with it". Some of the participants acknowledged the emotional and practical problems they had in association with MS and fatigue; they were optimistic and proactive and over the years they had built coping strategies to deal with those problems, "I used to get uptight about my garden, but it is going to be done some time, so what!"

CONCLUSION

Results from these focus groups support the use of the ECP for the management of MS-related fatigue although further research is required. Both the ECP and PSG were beneficial to participants and the value of peer support and social networking in terms of QoL and belief in one's ability to cope should be facilitated as part of the management of MS. However, participants who received the ECP further benefited from practicing energy conservation skills. Clinical guidelines for the management of MS by the National Institute for Clinical Excellence (NICE, 2004) include recommendations about the management of fatigue and state that general advice and training on how to manage this symptom should be given, including encouragement to use energy conservation techniques.

Some modifications of the ECP may be required and it is possible that certain personality traits, disease related and external factors may condition the effectiveness of the ECP. Although there is no evidence to suggest the most effective way to deliver ECPs, participants in this study benefited from group sessions and the opportunity to meet and share information with other people in similar circumstances. This was also the case for the control group, further supporting the intrinsic value of group sessions.

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REFERENCES

Gomm R (2004) *Social research methodology: a critical introduction* Palgrave Macmillan: Basingstoke.

Smith C, Hale L (2007) *The unique nature of fatigue in multiple sclerosis: Prevalence, pathophysiology, contributing factors and subjective experience* Physical Therapy Reviews 12 (1) pp43-51.

The National Collaborating Centre for Chronic Conditions in collaboration with the National Institute for Clinical Excellence 2004 Multiple Sclerosis. *National Clinical Guideline for diagnosis and management in primary and secondary care.* Available: http://www.nice.org.uk/nicemedia/live/10930/46699/46699.pdf Accessed 28th March, 2010.

SHARING GOOD PRACTICE 1

Neuroscience community services

A review in Wales looks at development of community models for Mid and South Wales

Jakko Brouwers

This year has seen another phase in the long standing review of neuroscience services in Wales.

In 2007 the Welsh Assembly Government commissioned Dr James Steers to undertake a review of neurosciences services in Wales which is contained in the Steers Review. Publication of that review was followed by a request from the Assembly Government to Dr Alan Axford, to develop recommendations on the implementation of the Steers Review. This report (the Axford report) came with 19 recommendations, some of which were implemented between 2009 and 2010 including the transfer of all neurosurgery in Wales to the University Hospital at Cardiff. The current review is tasked with the implementation of the remaining recommendations and is also known as phase 2 of the review. The review project board has split the work into different workstreams (see *Table 1*).

WORK STREAM	LEAD	
Workstream 1 **Spinal Surgery**	Paul Stauber	Director of Planning, Abertawe Bro Morgannwg UHB
Workstream 2 **Rehabilitation**	Fiona Jenkins	Director of Therapies and Health Science, Cardiff and Vale UHB
Workstream 3 **Neurology**	Tony Chambers	Director of Planning, Hywel Dda LHB
Workstream 4 **Diagnostics and transport**	Chris White	Director of Therapies and Health Science, Cwm Taf LHB

Table 1 ***Workstreams***

The *Rehabilitation workstream* was renamed the *Rehabilitation and supportive care workstream*. The aim of this workstream was to implement the 'Axford recommendations for rehabilitation and supportive care'. These were to:

- Establish a rehabilitation network which integrates spinal and neuro rehabilitation that supports patients at acute sites and in the community reaching out from the two current specialist centres in Cardiff and Swansea to ensure that patients are rehabilitated closer to home and to
- Strengthen supportive and palliative care for people with neurological conditions to be delivered by multi-disciplinary teams with a specialist interest in neurological conditions.

The Rehabilitation and supportive care workstream identified the following specific objectives:

- Map current local adult neurorehabilitation services by LHB;
- Develop service specifications for the neurological and spinal rehabilitation specialist services (including access criteria, bed requirements, in-reach and out-reach provision);
- Work with each LHB to identify pragmatic models for providing community based rehabilitation to patients with neurological and spinal injuries to facilitate timely discharge to the community, with on-going input and support from the specialist centres, making recommendations for the model to LHB Directors of Planning and to
- Identify within the service specification how the specialist neurorehabilitation service contributes to supportive and palliative care for people with neurological conditions, including through the provision of out-reach support to community teams.

The development of the community models started with a scoping of current services and obtaining a wide agreement on the needs of the neuroscience patients who would be using the community services. This was achieved through a series of workshops with a wide group of professionals, senior managers and patient representatives. Getting this agreement and insight would ensure the models to be patient (need) focussed.

The developed models are based on three common patient pathways that focus on delivering seamless care:

1 Community Integration pathway

This describes the patient pathway from immediately post-acute injury through an inpatient rehabilitation period (if appropriate) into the community.

Figure 1 ***Community integration pathway***

2 Community Support pathway

This describes the on-going monitoring of Acquired Brain Injury (ABI) and Spinal Cord Injury (SCI) patients.

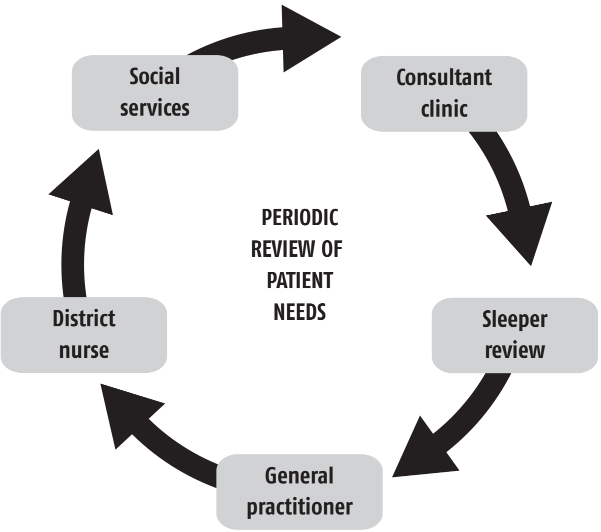

Figure 2 ***Community support pathway***

3 Escalation pathway

This describes the process of rapid (re-) provision of a service to the patient whose needs have changed, deteriorated or otherwise been identified as needing further support. It aims to provide this at the lowest appropriate level of service and as close to home as possible.

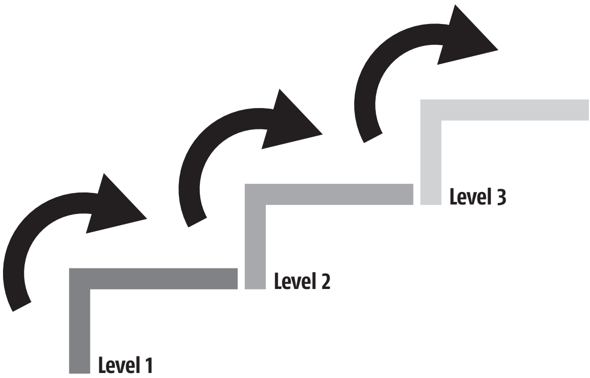

Figure 3 ***Escalation pathway***

In addition these pathways recognise three main levels of patient need or community service.

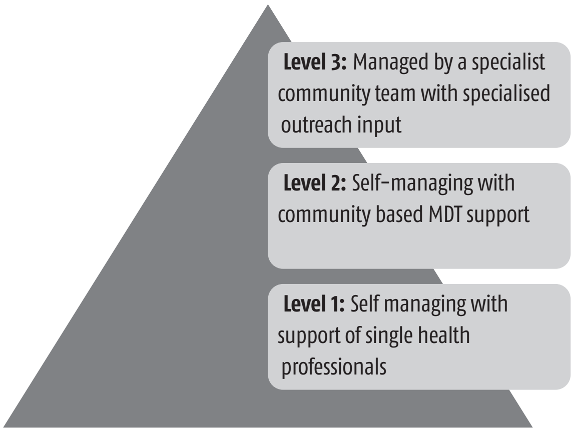

Figure 4 ***Levels of patient need***

In order to deliver the specialised community elements, the proposed model recommends the development of a specialised Acquired Brain Injury and Spinal Cord Injury Community and Outreach Service (ABICOS and SCICOS) for Mid and South Wales. It is proposed that these services are to operate from the two main specialised inpatient rehabilitation sites in South Wales and are to roughly cover the catchment areas of those services to ensure a seamless transition from inpatient to community service.

The report and the detailed developed proposed models have been subject to a wide consultation which took place over the summer involving clinicians and senior managers in each of the Health Boards in Mid and South Wales, as well as patient representatives. The detailed report and models have now been submitted to the Executive Directors of Planning in the Health Boards for consideration. An answer from this panel of Executive Directors is anticipated in November 2011.

SHARING GOOD PRACTICE 2

Don’t stand still!

Medicines management. Why does it matter?

Davina Richardson

There is a major move towards independent prescribing for appropriately skilled and trained physiotherapists. The Government has announced a public consultation in independent prescribing for physiotherapists. The consultation is open from 15th September until 8th December 2011.

This is about as big as becoming autonomous practitioners and getting ‘Protection of Title’. Some of us remember the time that we took referrals with instructions and requests for specific treatments identified by our medical colleagues. Those of you who are a little younger will remember the time that anyone could take the title of physiotherapist. It took a lot of hard work and professional development to be recognised as autonomous practitioners that had both assessment and treatment skills to the point where we could make differential diagnosis and manage patients as first contact practitioners with a protection of title. Now, we are close to being able to improve patient experience and outcome by supporting our patients’ medicines management needs as an adjunct to physiotherapy.

Part of our routine subjective assessment includes finding out about the drug history and discussing with our patients the effect of medication changes, increasing or decreasing dosage, timing of the medication, side effects and improvements following changes in dosing regimes. How many times do we refer back to our medical colleagues making suggestions on altering medications or considering starting or stopping medications that appear to have little or no subjective or objective effect or outcome for our patients? How often do we identify that there may be a need to review medications that have not been altered for many years? How often do we identify a need for pain medications, spasticity medications and other pharmacological needs?

Medicines management may not be for everyone. However, experienced physiotherapists who are working in a specialist field, focussing on particular presentations and or conditions need to be aware that they have the opportunity to work more closely with their medical colleagues on medicines management. Since 2000, specifically trained physiotherapists have been able to legally administer medications prescribed by their medical colleagues. Since 2005 physiotherapists have been able to train to be supplementary prescribers supporting their medical, nursing and pharmacy colleagues in finding the appropriate medicines management for their patients under agreed clinical management plans. If the outcome of the public consultation is favourable the CSP is ready with information for the Government to support moving forward with this exciting new development for the profession.

So, I would urge you all to complete the consultation at the following website: www.dh.gov.uk/en/Consultations/Liveconsultations/DH_129983

Before exploring the consultation you may wish to log onto the CSP website and check out the information on prescribing if you are not already familiar with it (www.csp.org.uk/search/thisnetwork/820/prescribing).

Remember you may not feel ready at the moment to support your patients’ medicines management but in the future if you specialise, you may find this advanced practice useful in optimising the impact of your physical management programmes.

REFERENCE

DOH (July 2009) *DH Allied Health Professions prescribing and medicines supply mechanisms project* Gateway reference 12185.

http://wwwdh.gov.uk/health/search/?searchTerms=Allied+Health+Professions+prescribing+and+medicines+supply+mechanisms+scoping+project+report

SHARING GOOD PRACTICE 3

Why waste good data?

Gita Ramdharry

I'm about to clamber onto my soap box and cry out about a topic I feel passionately about. Some of you may hurry on by. Some of you may linger then decide you've heard enough ranting lunatics for one day. Some of you may listen then forget what I was talking about. Some of you may pay attention and decide to act. If I can get just a handful of you to act, I will be a happy physio!

So, what am I crying out about? As a physiotherapy researcher I hear a repeated drone of "there's not enough evidence for the interventions we give". It frustrates us all, makes it difficult to justify our important contribution to patient care. I know there are many, many small studies out there, MSc dissertations gathering dust on people's shelves. Small scale projects, audits, well constructed case studies with outcome measures. Most of these would have been hurriedly done to get the qualification or tick the box. But somewhere, out there, I know there is useful data that could help other researchers. Pilot studies in quantitative methods can provide information on effect sizes, useful for working out the sample needed for bigger studies. In some areas there is so little written that your work might be the only work there is. For me, writing up my MSc project provided me with my first publication. Great on my CV and really helped my path into academia.

It's my wish that people don't hide good work under a bushel. Writing up studies is a daunting thought for many, but there are smaller physiotherapy or rehabilitation journals that will publish good quality pilot studies. ACPIN's very own *Synapse* can be a good publication in which to cut your academic writing teeth. The reviewers provide feedback that can help you develop your writing skills.

Of course as a physiotherapy researcher I'm also interested in good quality work but that's where project supervisors can help. They can advise you if they think it is worth publishing and provide writing support. If it means they get their name on a publication, most would be agreeable.

So what's in it for you? A publication on your CV does no one any harm. It shows that you can start/complete a project, including a comprehensive write up. Also, important skills for management and service development. It shows a commitment to quality of patient care through enquiry, review of evidence and consideration of practice. The skills you learn while writing, editing and responding to feedback are invaluable and transferrable.

So, to those of you who haven't hurried on by, think about blowing the dust off your dissertation and sharing your hard work. You never know, mighty trees could grow from that small seed!

FOCUS ON...

Community based rehabilitation in Haiti

Hannah Steadman

In July 2011 I completed a year's sabbatical from my NHS post in London to work in Haiti. Having done previous voluntary work in Ghana, West Africa, I went with the vision of providing longer-term work that has a sustainable impact on the community. Working with Haiti Hospital Appeal, a British charity, I helped develop the first successful community based rehabilitation programme in Haiti (a WHO initiative to improve the lives of those with disabilities) and helped set up the only inpatient rehabilitation centre in northern Haiti.

Haiti, even before the earthquake struck in January 2010 was in a desperate situation. Having struggled with an unstable and corrupt government since its independence in 1804, Haiti is now the poorest country in the Americas. Basic access to water, sanitation and healthcare facilities, alongside an underdeveloped educational structure and poor economic growth, all contribute to the extremely harsh standard of living that the majority of Haitians endure. Many people living with a disability in Haiti and other low-income countries have limited or no access to rehabilitation, a fact stated by WHO. This is also something I saw clearly for myself, primarily fuelled by poverty, stigma and poor environmental access.

Since the devastating earthquake the rehabilitation network has been expanding greatly with the majority of this work concentrated in the capital, Port-au-Prince. Haiti Hospital Appeal was one of the few Non-Governmental Organisations (NGOs) based outside of Port-au-Prince to respond to the spiralling need for rehabilitation in the aftermath of the earthquake and set up a spinal injury unit within weeks of the disaster. In January 2011 they secured funding to become the only permanent inpatient and outpatient rehabilitation unit in the

Shada, the largest slum in Cap Haitien, an example of extremely poor access to clean water and sanitation.

north of Haiti and this is where I have contributed most of my time working as a physiotherapist.

The roles and expectations of healthcare professionals in Haiti are different to what you find in the UK. For example, nurses are trained in much more of a medical model and it is the duty of family members to be responsible for the self-care aspects of a hospital stay. Physiotherapists who attend training school in Haiti only have access to a limited qualification, so they tend to be trained less in developing their own clinical reasoning and rely more heavily on doctors' directions. Conversely, nurses are often the only qualified staff in rural clinics and therefore are expected to have greater responsibility in diagnosing and managing patients' conditions. With no physiotherapy schools in northern Haiti and no specific OT or SLT taught throughout the country, therapists are hard to come by. Haitian physiotherapists trained in nearby Dominican Republic or Cuba often expect salaries above what is affordable by both public and private healthcare settings and so Haiti often looses out on skills gained by well-educated nationals as they choose to continue to live and work abroad (known as the 'brain drain phenomenon').

There has been a presence of westerners in the Haitian healthcare setting for decades, but with this comes many issues, both positively and negatively affecting the health system. Being in Haiti long enough to understand the culture and values at both the individual and at a healthcare level enabled me to work in a sensitive and effective capacity. From my experience, to be able to make a sustainable impact it is crucial that overseas volunteers focus their time on training and education of local staff rather than direct patient time.

I worked closely with all the staff at a private (charity-funded) hospital to facilitate the set up and management of a rehabilitation unit. I supported the four therapists with hands on and theoretical training, and worked with the lead physiotherapist (officially trained to the level of a UK assistant) to set up documentation and develop her in both clinical and non-clinical capacities. I also worked at the private nursing school in town, presenting lectures on the fundamentals of rehabilitation, and what the nurses' role can be in rehabilitation when there is, and when there isn't a therapist in the setting. I also helped to set up a mobile therapy clinic to outreach patients and provide a discharge follow-up service.

It was important for me to recognise that approaches I would have normally used in the UK for any aspects of my work were not necessarily the most appropriate for that setting. Working collaboratively with the Haitian staff allowed more

CASE STUDY

"I stepped over a pile of batteries and was left unable to walk." The description Marie-Saint gave as the cause of her quadriplegia. The voodoo curse that this patient was describing is a common belief amongst the majority of people in Haiti. Voodoo followers are taught that disability is the work of Satan as a punishment for something they or their family have done wrong. A difficult concept to understand, being brought up in the UK and an eye-opening perspective on what can influence individuals' engagement in rehabilitation. Eight years of sleeping, washing, cooking and eating, all on the floor of her rat-infested shed of a home, living alone in the slum district of town Marie-Saint oozed determination and strength, yet her situation left her completely vulnerable and isolated.

As soon as the gym was opened, Marie-Saint and twelve other patients soon flooded into the unit. But Marie-Saint didn't believe rehabilitation would make a difference. She was simply happy to be receiving three meals a day, and a bed to sleep in. As time went on she saw other patients dedicate their days to rehabilitation and progress really well, she slowly became more involved and proactive in her programme.

Through her success, sheer determination and change in attitude towards her disability, Marie-Saint is naturally acting as a disabled advocate. She talks to her neighbours about her experiences and how rehabilitation improved her function. Since her discharge she has referred two children to the rehabilitation centre. With help from a microfinance program she is now able to earn a living selling snack food. Being able to walk out of her home and into society she is empowering herself and others with disabilities, and shows that her disability isn't preventing her from living a normal life.

But if no services had gone to the slums and worked with the community leader to meet all the people with disabilities in the area, Marie-Saint would still be sitting on the floor by herself, unable to stand.

Marie-Saint before and after her period of rehabilitation.

Ben, a spinal patient and earthquake victim, training for the Paralympics.

effective management of tasks and problem solving, and helped to draw away from the common misconception that 'westerners are better'. Although many westerners have been better educated than many Haitians, what is researched and taught in one population and culture may not be directly applied to another.

Another large component to improving access to rehabilitation in low-income countries such as Haiti is an initiative known as 'Community Based Rehabilitation' (CBR). It has a broader goal than rehabilitation as we know it in the UK, and aims to enhance the quality of life for people with disabilities and their families through ways which are low cost and easy to access. The program has been used in communities in low-income countries all over the world for over thirty years, and there are some well-known examples of CBR working very successfully in India and Mexico.

The goals of the program are always to:

- Enhance activities of daily life of disabled people;
- Create awareness in the disabled person's environment to achieve barrier free situations around them and help them attain equal human rights and
- Create a situation in which the community of the disabled person participates fully and takes ownership of their integration into society.

Alongside the rehabilitation unit, Haiti Hospital Appeal has also set up a CBR program. Using the 'train the trainer' principle, the program hopes to empower the local community to promote awareness and engagement in society, and to educate professional leaders so they can help to reduce stigma and work towards improving access to health, education and livelihoods. Four Haitian professionals have been employed, including a pastor and a school teacher, to work at the level of the people with disabilities and their families, the community and ultimately at the governmental level.

I led the broad, initial training for the employees. This included explaining the concepts of the program, facilitating discussions on understanding the community culture and initiating change, providing an introduction to the physical and environmental problems they may be faced with, and basic principles of rehabilitation. A fantastic resource was a series of books written by a group of village health and rehabilitation workers in Mexico. They have not been professionally trained, but instead use their own experience of working with villagers with disabilities to explain rehabilitation in lay-persons terms; giving examples of low-cost, culturally sensitive ways of providing rehab (see David Werner links).

Additionally, four disability advocates have been employed – one of whom is Patrick, a 26 year old who sustained a complete C6 spinal injury from the earthquake. Their main role will be providing peer support to others with disabilities – at the rehabilitation centre and within the community, and talking at churches across the region about what it feels like to have a disability and what people can do to support and include people with disabilities in their own communities. They will be the first official disability advocates in the north of Haiti so it is an exciting step in working to overcome the many barriers to those with disabilities.

Haiti Hospital Appeal have also been advocating from an entirely different angle. In partnership with The Haitian Paralympics' Committee, Global Hand and BMS World Mission they have launched a campaign called 'The Dream' in which they are supporting a group of individuals who sustained spinal injuries in the earthquake to become paralympians. We are hoping to watch them become the first Haitian team to enter the Paralympics Games – so keep a look out for them in London 2012!

LINKS

WHO website: http://www.who.int/disabilities/cbr/en/

Joint Position Paper WHO, UNESCO and ILO (2004): http://whqlibdoc.who.int/publications/2004/9241592389_eng.pdf

Disabled Village Children **and** ***Where There is no Doctor*** David Werner (2009): http://www.hesperian.org/publications_download.php#DVC

Helping Health Workers Learn: A book of methods, aids and ideas for instructors at the village level David Werner (2009): http://www.hesperian.org/mm5/merchant.mvc?Store_Code=HB&Screen=PROD&Product_Code=B020

My blog written during my time in Haiti: www.do-it.org.uk/doitblog/overseas/category/Hannah

Haiti Hospital Appeal website: www.haitihospitalappeal.org.uk

The Dream website: www.haitidream.org

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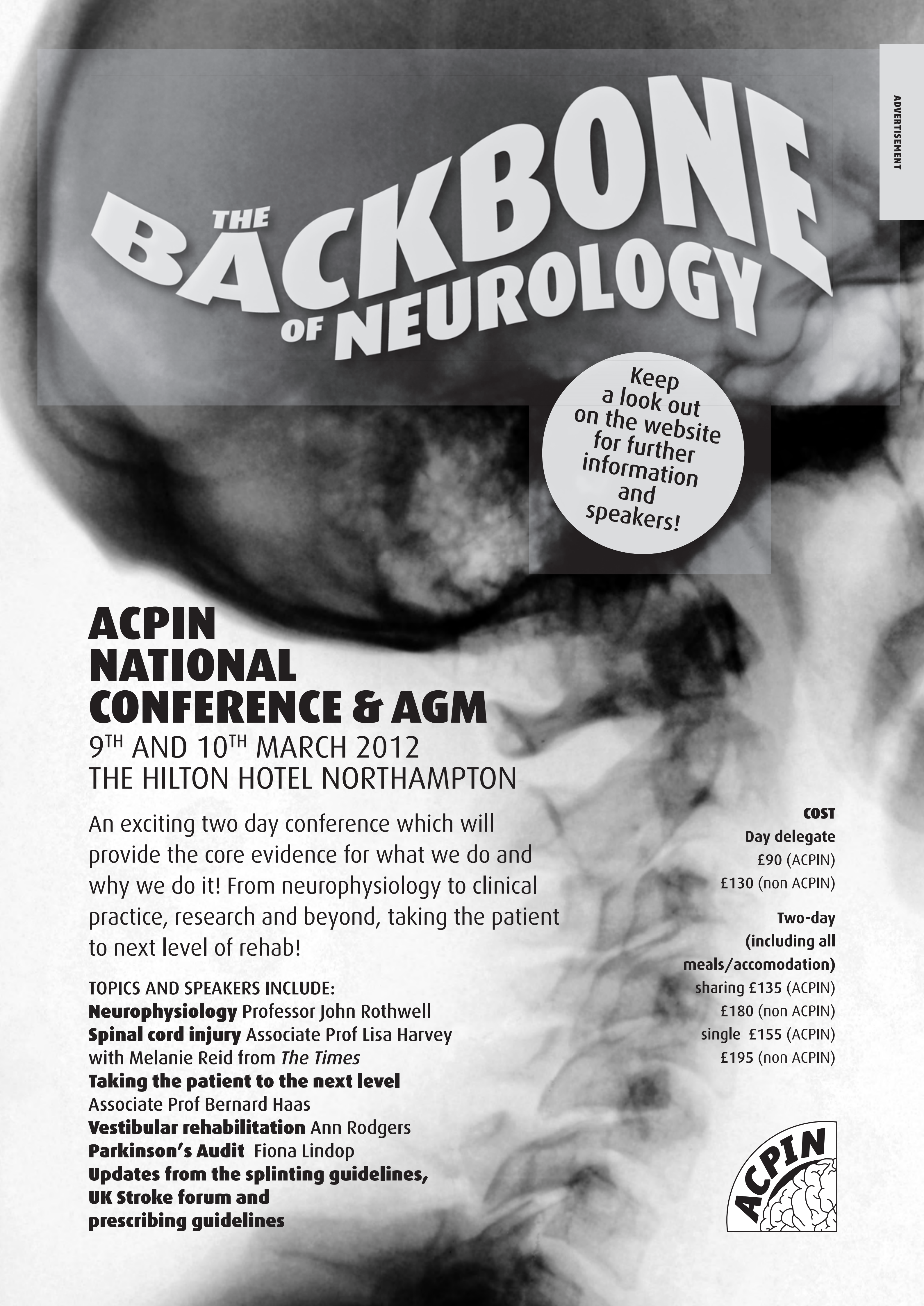

THE BACKBONE OF NEUROLOGY

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- Botticello AL, Chen Y, Cao Y, Tulsky DS ***Do communities matter after rehabilitation? The effect of socioeconomic and urban stratification on well-being after spinal cord injury*** pp464–471.

- Charlifue S, Apple D, Burns SP, Chen D, Cuthbert JP, Donovan WH, Lammertse DP, Meade MA, Pretz CR ***Mechanical ventilation, health, and quality of life following spinal cord injury*** pp457–463.

- Chen Y, Deutsch A, DeVivo MJ, Johnson K, Kalpakjian CZ, Nemunaitis G, Tulsky D ***Current research outcomes from the spinal cord injury model systems*** pp329–331.

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- Forchheimer MB, Richards JS, Chiodo AE, Bryce TN, Dyson-Hudson TA ***Cut point determination in the measurement of pain and its relationship to psychosocial and functional measures after traumatic spinal cord injury: a retrospective model spinal cord injury system analysis*** pp419–424.

- Kirshblum S, Botticello A, Lammertse DP, Marino RJ, Chiodo AE, Jha A ***The impact of sacral sensory sparing in motor complete spinal cord injury*** pp376–383.

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- Geurtsen GJ, van Heugten CM, Martina JD, Rietveld AC, Meijer R, Geurts AC ***A prospective study to evaluate a residential community reintegration program for patients with chronic acquired brain injury*** pp696–704.

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- O'Dell MW, Kim G, Rivera Finnen L, Polistena C ***Clinical implications of using the arm motor ability test in stroke rehabilitation*** pp830–836.

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- Asplund K, Glader, Norrving EB, Eriksson M, and for the Riks-Stroke Collaboration ***Effects of extending the time window of thrombolysis to 4.5 hours: observations in the Swedish Stroke Register (Riks-Stroke)*** pp2492–2497.

- Sarikaya H, Arnold M, Engelter ST, Lyrer PA, Mattle HP, Georgiadis D, Bonati LH, Fluri F, Fischer U, Findling O, Ballinari P, Baumgartner RW ***Outcomes of intravenous thrombolysis in posterior versus anterior circulation stroke*** pp2498–2502.

- Wagner TH, Lo AC, Peduzzi P, Bravata DM, Huang GD, Krebs HI, Ringer RJ, Federman DG, Richards LG, Haselkorn JK, Wittenberg GF, Volpe BT, Bever CT, Duncan PW, Siroka A, Guarino PD ***An economic analysis of robot-assisted therapy for long-term upper-limb impairment after stroke*** pp2630–2632.

NEWS

Wales is developing a regional ACPIN committee

***Jakko Brouwers** Interim Chair, Wales ACPIN*

Since 2010 a group of enthusiastic neurophysiotherapists in Wales have been gathering support from neurophysiotherapists for the development of an active regional group for Wales. This would help ACPIN members in Wales with local opportunity for development of an ACPIN course/training portfolio, which is responsive to service needs in Wales and needs voiced by members.

In order to gather support an audit was undertaken at the Welsh Stroke Conference in 2010, asking physiotherapists in attendance if they would be interested in an ACPIN region for Wales.

Following positive results collaboration with South West ACPIN started to develop a subgroup for Wales, under the umbrella of South West ACPIN. In February of 2011 a first (free) evening lecture was organised in collaboration with Cardiff University, which was really well attended. Further enthused by the response of the physiotherapists attending this first lecture, a group of interested physiotherapists was started first through email with email meetings and later a few face to face meetings to organise the first weekend course (*Pusher Syndrome* by Gemma Alder). This course was held at Rookwood Hospital in Cardiff. It was a great success with fantastic feedback received from participants. In preparation for this course an interim committee for Wales was formed with the aim of holding an AGM early in 2012 to become a fully functioning regional committee for Wales.

The interim Committee has the following members.

- **Jakko Brouwers** – interim chair
- **Gaynor Jackson** – interim treasurer
- **Reji Abraham** – interim communications officer
- **Adele Griffiths** – interim regional representative
- **Sophie Bool** – interim secretary
- **Michelle Price** – interim committee member

The aims of the interim committee are to develop a portfolio of two courses and two evening lectures each year. In addition the group is working together with Manchester ACPIN and Cardiff University to organise a practical two or three day workshop with Anne Shumway Cook and Marjorie Woollacott for September 2012.

For future courses and lectures the aim is to use a range of easily accessible venues and to keep costs of courses down to ensure value for money for ACPIN members and enable physiotherapists access to CPD type training in the current cash strapped NHS climate.

The group will endeavour to use technology to include access to lectures for those physiotherapists living and working in more rural parts of Wales. The interim committee holds meetings at a strategically placed service station along the M4 motorway, which has free wi-fi and hopes to use the internet to enable some people to take part in the running of the committee who would otherwise be unable because of travel times or geography.

The details of the group will be made available on the ACPIN website for those interested in taking part or who would like to be kept informed of any courses or other activities. ACPIN members in Wales will still be able to access and attend courses (as a member) with other regional groups and the ACPIN Wales group hopes to be able to collaborate with the other neighbouring regions in future in the same way as they have been working together with South West ACPIN over the last year.

UK Forum for stroke training

***Verity Baker** Project Manager UK Forum for Stroke Training (UKFST)*

The UK Forum for Stroke Training (UKFST) has now officially been incorporated into the UK Stroke Forum. The UKFST works to improve the quality of stroke care UK-wide through the endorsement or 'quality' assessment of stroke-specific education against the Stroke Specific Education Framework (SSEF). To support the important work of this training arm, and to ensure as many training providers as possible can benefit from UKFST endorsement, UKSF (hosted by the Stroke Association) has developed a new fee structure for endorsements.

It has been widely recognised that developing stroke-specific courses in line with the SSEF greatly benefits training providers, stroke professionals and patients. With UKFST and UKSF now sharing many costs, such as administrative expenses, it has been possible for this saving to be passed onto UKFST applicants and for a new fee model to be developed which will make obtaining endorsement easier for all organisations across all sectors. UKSF strongly believes that as many organisations as possible should be able to assess their course against the SSEF and experience the benefits of running courses which are quality-checked, up to date and reflective of current practice.

Visit www.ukstrokeforum.org today and click on the UKFST tab to find out more about the new fees, the types of courses already endorsed and news about resources currently being developed, such as SSEF Role Profiles. SSEF Role Profiles contain the knowledge, skills and competences professionals in each area of the stroke pathway, including physiotherapists, should possess for their level and grade.

Interactive CSP update September 2011

***Chris Manning** iCSP link moderator for neurology.*

There are 9,622 registered users on the neurology network nearly 1,000 more than this time last year.

The iCSP website has been updated and combined with the main CSP website to make access and searching easier. I hope you find the changes an improvement and make sure you feedback your comments via the website – www.csp.org.uk

There are a couple very interesting discussions that have stimulated the sort of reasoned debate that iCSP was designed to encourage one about stretching stimulated by the Cochrane review and another on how 'rehabilitation potential' is determined.

We will be adding a discussion about what you would like to see in *Synapse*, future ideas and sections, so when you have read this copy get online and share your thoughts.

There are currently hundreds of discussions on the network so search the network to check if there is already a discussion on a topic and remember only use the email members option if an urgent reply is needed. Documents can be added to discussions. If you do this, everyone can see rather than having to email individuals seperately.

The upper limb features strongly in the documents section. Use this area to share guidelines and evidence.

Keep in touch.

Membership update

***Sandy Chambers** Honorary Membership Secretary*

I am pleased to report that membership in ACPIN continues to grow. We now have over 2,350 members, the majority of whom are paying their membership fee conveniently by direct debit. I hope you will agree that the move to offer payment by direct debit has been a positive step for ACPIN.

Some of you are aware that we will be adding a new region to ACPIN – Wales. Members living in Wales have done a great deal of work to create their own committee and will be 'official' as of January. We will be adding Wales as a region choice at that time and moving members automatically. If you live in Wales but do not wish your region to be changed, please contact me.

The online membership system is due for an upgrade and work on that should begin shortly. The goal will be to have each member able to access and update their membership details online themselves and decrease the administration time needed to maintain the system. Additionally, regional committees will have easy access to up-to-date membership lists for purposes of communicating with their local members. When we are ready to change to the new system, you will receive a notice and any instructions. Until then, please do use the current system to update your details should they change.

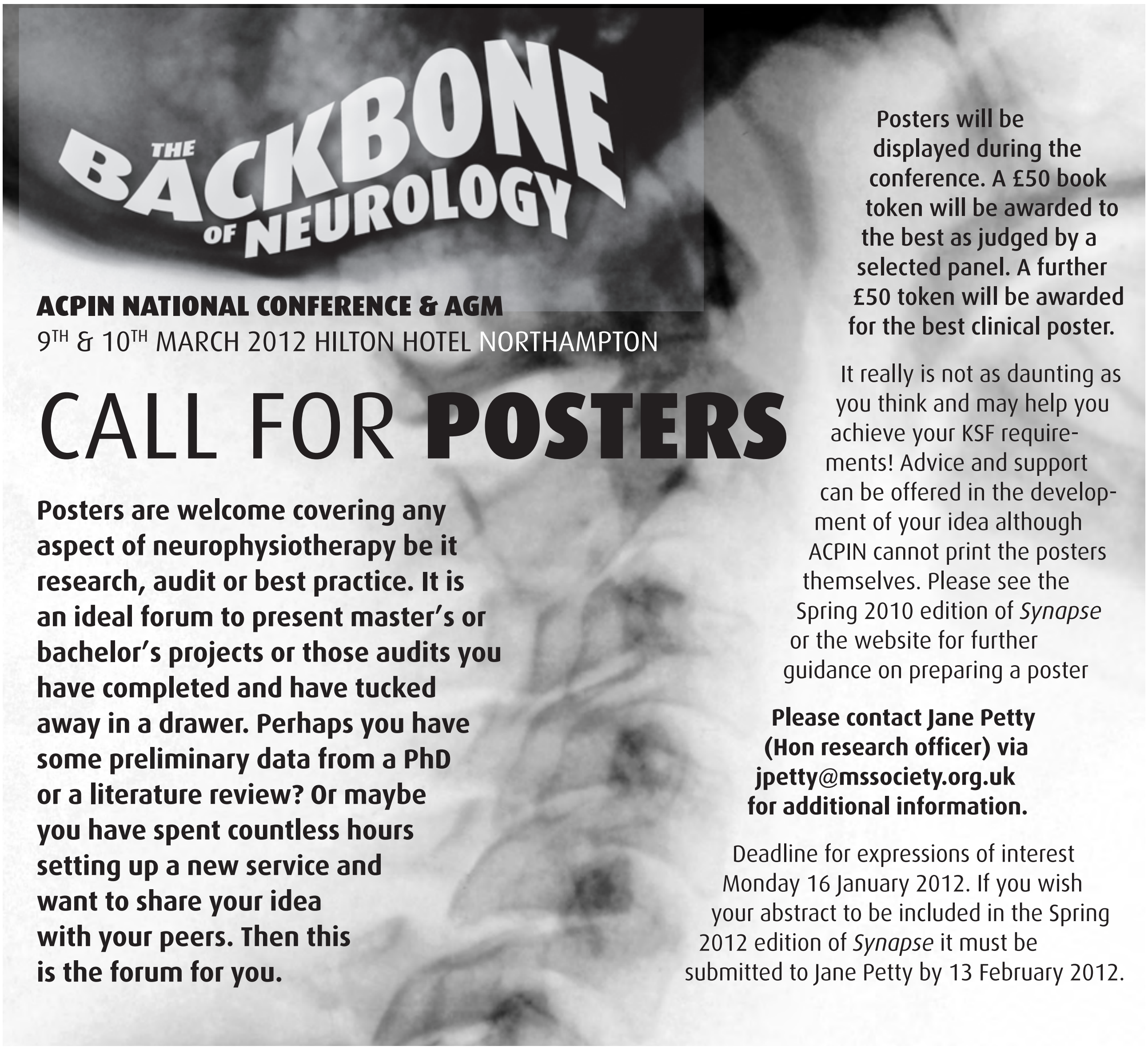
In order to streamline costs and time, the executive committee voted in September to cease providing back-copies of the *Synapse* Journal to new members joining after the journal has been posted. This will not affect current members but will affect new members from now forward. Please encourage your neurophysiotherapy colleagues to join or renew their memberships, if paying by cheque, as close to 1st January as possible to receive best benefit of the membership year.

Finally, as we do each year, we closed the membership system for year-end maintenance on the database by the end of October.

As always, if you have any queries regarding your membership, please contact me directly.

Article responses – Editor's comment

Following the successful publication of Nathaniel Walker's article in the Spring/Summer 2011 edition of *Synapse*, we received a letter from another ACPIN member. We welcome readers to provide constructive comments or opinions on the content we include in each edition and will always forward them to the author, should they wish to respond.



ACPIN NATIONAL CONFERENCE & AGM

9TH & 10TH MARCH 2012 HILTON HOTEL NORTHAMPTON

CALL FOR **POSTERS**

Posters are welcome covering any aspect of neurophysiotherapy be it research, audit or best practice. It is an ideal forum to present master's or bachelor's projects or those audits you have completed and have tucked away in a drawer. Perhaps you have some preliminary data from a PhD or a literature review? Or maybe you have spent countless hours setting up a new service and want to share your idea with your peers. Then this is the forum for you.

Posters will be displayed during the conference. A £50 book token will be awarded to the best as judged by a selected panel. A further £50 token will be awarded for the best clinical poster.

It really is not as daunting as you think and may help you achieve your KSF requirements! Advice and support can be offered in the development of your idea although ACPIN cannot print the posters themselves. Please see the Spring 2010 edition of *Synapse* or the website for further guidance on preparing a poster

Please contact Jane Petty (Hon research officer) via jpetty@mssociety.org.uk for additional information.

Deadline for expressions of interest Monday 16 January 2012. If you wish your abstract to be included in the Spring 2012 edition of *Synapse* it must be submitted to Jane Petty by 13 February 2012.

CSP
Congress
2011

Abstracts from the neurology strand at this year's CSP Congress in Liverpool

Professor Mark Rogers

KEYNOTE SPEAKER

Department of Physical Therapy and Rehabilitation Science, University of Maryland

Balance strategies and training with people with Parkinson's Disease and older people

Impairments of posture, balance and gait associated with falls are common accompaniments of advancing Parkinson's Disease and older age. Physiotherapy plays the key healthcare role in addressing these debilitating problems that often lead to chronic functional disability and diminished quality of living. This presentation will highlight emerging research developments that impact clinical interventions for enhancing posture, balance, gait, and fall prevention. Recent findings from our research on improving posture and locomotion coordination to optimize mobility in people with Parkinson's disease, and on interventions targeting the neuromechanical bases of falls among older individuals will be presented. Emphasis will be placed on exploring the question of whether interventions focused specifically on either balance training or gait training to achieve effective outcomes is conceptually accurate, or if there is a need to design intervention strategies that emphasize the interactive nature of posture and locomotion functions to best achieve gains in performance and functional outcomes.

Professor John Rothwell

Professor of human neurophysiology, UCL Institute of Neurology

Recent advances in neuroplasticity and their relevance for rehabilitation practice

Rehabilitation after stroke is driven by practice and engages natural processes of learning and adaptation that are used to develop skills in the healthy brain. There is now some evidence that motor learning and retention is intact in patients after stroke. There is also a wealth of evidence that transcranial methods of brain stimulation, as well as artificial stimulation of afferent inputs can interact with processes of synaptic plasticity (long term depression or long term facilitation: LTD/LTP) that are thought to underlie behavioural motor learning, both in the intact brain and in patients after stroke. The question is whether it is possible to use the latter as a potential treatment that will improve the response to therapy after stroke.

Studies in the healthy brain show that transcranial methods can improve the rate of learning of simple motor skills and the results of clinical trials of brain stimulation methods in a variety of conditions suggest that there may be some potential for progress, but far more evidence is needed. I will present recent results from some UK studies in stroke. Some of them involve arm function in chronic patients whereas other examine, for example, dysphagia in acute stroke patients. The results vary considerably but the reasons for these may be instructive: are we likely to achieve better results in the acute phase of rapid reorganisation after stroke? Will there be better recovery in systems that normally are controlled bilaterally by the brain, such as swallowing, rather than unilaterally such as arm function?

Such questions are important and are complemented by others such as the appropriate amount of stimulation to apply and how to interface TMS/TDCS with other therapies. I will explore some reasons for the variability in response to treatments in individual patients, and how we may in the future try to compensate for this.

David Butler M App Sc, EdD

NeuroOrthopaedic Institute, University of South Australia

Graded Motor Imagery – from science to the clinic

Graded Motor Imagery (GMI) is a sequence of strategies including the assessment and treatment of left/right body part discrimination, motor imagery and mirror therapy. This is an emerging therapy based on neuroanatomical and neuropathogical knowledge provided by functional MRI studies, the awareness of mirror neurones in the brain, principles of graded exposure and response prevention and a small number of clinical and randomised controlled trials. The major therapeutic targets are Complex Regional Pain Syndrome (CRPS) and phantom pains although there is increasing anecdotal and research evidence which suggests that clinical trials for a number of chronic pain states would be worthwhile.

Left/right discrimination is the ability to recognize whether a pictured body part belongs to the left or right side. This is known to be disrupted in groups with diagnoses such as CRPS and chronic back pain. Motor imagery involves imagining or watching movement in variable contexts and mirror therapy utilizes a mirror to present a visual illusion that a painful or disabled part is better than the person currently thinks it is. While these strategies have been used individually in the past, the GMI process utilizes all three.

In this presentation, the graded motor imagery strategy will be defined and the supporting evidence will be briefly presented. A practical demonstration of the strategies will be provided to facilitate the clinical reasoning and transition of this knowledge to the clinic.

Dr David Lowery

Senior Research Manager/Honorary Research Fellow

Currently managing a National Institute for Health Research funded programme of applied research that aims to improve community based care for people with dementia (EVIDEM).

Physical activity as a tool for improving outcomes for people with dementia: current clinical guidelines, research recommendations and gaps in our knowledge

Over half a million people in the UK are living with dementia. Direct care costs for this population represent a substantial portion of the UK health and social care budget and are estimated at approximately £17 billion pounds per year. Further, in the context of the Governments' recent comprehensive spending review and the move to GP commissioning, interventions that are both therapeutically and cost effective will become increasingly important.

There is a growing body of literature on non-drug interventions and their benefits in terms of delaying the onset of dementia and as a therapy to relieve important symptoms of this syndrome. For example, physical activity (PA) appears to help reduce some behavioural and psychological symptoms, especially depressed mood and agitation and may also improve sleep and reduce 'wandering'. While the full benefits of physical activity are not yet known, current clinical guidelines do recommend physical exercise for people with dementia. Exercise that helps promote and maintain independence, as well as alleviate particular symptoms of dementia should be encouraged. Where appropriate, the expertise of physiotherapists should be utilised to support people with dementia to achieve these goals.

A synthesis of the evidence of the effect physical activity can have for older people with dementia will be presented in this session. Drawing upon the latest research, delegates will gain an understanding of what types of physical activity have been tested as interventions for dementia and the outcomes that have been demonstrated for participants. In addition, barriers to adherence/factors that might prevent effectiveness will be explored along with practical strategies for overcoming these.

Dr Sara Demain

University of Southampton

The use of sensory stimulation and haptic devices in neurorehabilitation

Normal movement requires an intact somatosensory system. Somatosensory impairment is common in neurological disorders; for instance up to 85% of people with stroke have impaired tactile and/or proprioceptive sense in their affected limbs. Somatosensory loss has been associated with reduced coordination, ineffectual grip regulation and ultimately a poorer functional prognosis. Despite the importance of sensation to function, current neurorehabilitation programmes place relatively little emphasis on sensory retraining.

In recent years the field of haptics (meaning sense of touch) has contributed to our understanding of how somatosensory information is used to explore the environment and generate functional movement. Haptic devices incorporated into joysticks, data gloves, and force feed-back robots can provide sensory feedback to users about the physical properties and movements of virtual objects. Devices may simulate real physical properties, such as weight, texture, friction and temperature, so that users are able to interact with and 'feel' virtual computer -generated objects.

Haptic devices are now being incorporated into neuro-rehabilitation. Therapy services can rarely provide the intensity of practice necessary for neuroplasticity and recovery. Computer-based rehabilitation systems have, therefore, been developed to augment one-to-one therapy. Such devices can be used at home and the inclusion of computer gaming can increase motivation and adherence. The inclusion of haptic feedback into these systems can increase the reality of the experience and facilitate improved sensori-motor integration. A team of physiotherapists and engineers from the University of Southampton have been developing finger worn haptic devices to generate a sense of touch when people grasp a virtual object with the aim of enhancing grasp re-education post-stroke.

This presentation will review key research on sensori-motor integration and its importance to recovery. It will then describe key haptic technologies, their development for neuro-rehabilitation and future research directions.

Dr Mike Trenell

NIHR Senior Fellow/Director, MoveLab, Newcastle University

Increasing activity in people with long term conditions

Physical activity, physical inactivity and regular exercise are important aspects of health and disease. Despite this, low levels of physical activity remain one of the largest preventable disease risk factors in western society. This session will focus on the evidence about the role of physical activity and exercise as a therapy in chronic diseases and how to effectively implement them. The topics will range from the physiology of physical inactivity to developing cost effective interventions.

Tom Penman

Borough services manager, Barts and the London NHS Trust

How service user involvement can help build capacity in neurological services

There are a wide range of different models of user engagement in the development and delivery of services. Translating aspirational patient and public involvement policy and research into practise can be challenging. This session will review the possibilities for and benefits of greater partnership working between healthcare staff and service users from the outset. The barriers to changing the professional-patient dynamic and engaging hard to reach users will be discussed, as well as practical ideas for developing an effective infrastructure to support service capacity building through user involvement.

Professor Pip Logan

Associate professor in community rehabilitation, University of Nottingham

Community based falls prevention and rehabilitation

Falling is very common and distressing in older people and even more prevalent with people who have a long term neurological condition such as stroke, Parkinson's Disease or Huntington's Disease. Falls prevention interventions are recommended by NICE for anyone who has fallen or is at risk of falling. It is recommended that a multi factorial approach provided by a multi disciplinary team is the best intervention available.

Research undertaken in Nottingham has proved that a falls prevention service aimed at people who are at high risk of falling can reduce falls by half over a year and is cost effective.

This presentation will present the Nottingham data and use other studies to explore what is community falls prevention, who it works best with and how can therapists deliver the interventions.

Review

CSP Congress 2011 Liverpool
8th October 2011
Review by **Anita Wade-Moulton**

As a regular visitor to Congress I was keen to visit again the familiar lecture halls, exhibition stands and hopefully bump into friends I haven't seen for some time.

Although I am now long qualified, Congress never fails to spark up my enthusiasm. I anticipate seeking new knowledge on the latest research studies, reinforcement of our anecdotal practices through research findings and sometimes to learn just a snippet of information that will make a big difference to my clinical practice. Viewing the latest designs in equipment is also a must, whilst wondering around the exhibition stands at coffee times.

So first was a welcome a cup of tea after my not so long journey into Liverpool before I started on my planned line up of lectures.

Although the lectures are divided into the familiar strands of 'Leadership, Management and Public Health' 'Neurology', 'Musculoskeletal' (MSK) and 'Respiratory', my obvious bias was to neurology. Scanning through the lecture programme gave me the opportunity to link in with other strands as well though.

A snap shot of some of the sessions attended hopefully will give an overall feel of the two days.

Friday

Friday started with 'Parkinson's Disease, Falls and Balance', a very informative morning helping to give more information regarding intervention strategies we can use with many of our patients, especially those with Parkinson's Disease. Research evidence was presented in the effectiveness of this. This also suggested ways of addressing our treatment model in relation to coupling/sequencing to bring together our posture and walking focus. In summary, it was a stimulating and informative session.

As a 'hands on' physiotherapist, I went into the session 'Using Telemedicine in MS clinics' sceptically. I was pleasantly surprised that it wasn't quite what I expected and it was a very useful service for some of the more 'remote' patients. It actually did involve the use of a 'hands on' physiotherapist (at one end of the telephone conference). This was a service which embraces modern technology and will be a very useful tool for many of our patients who live in more remote areas of the country where it is difficult to access speciality centres, but enables liaison with community teams to maximize the service and quality of care.

The founders' lecture was an inspiring and humorous reflection on Dr Gills Hicks' road to independence after loosing both legs in the London bombing. It was good to hear such positive encounters with her physiotherapists, especially in today's climate of 'doom, gloom and cutbacks'.

The afternoon diverted me away from the neurology sessions to listen to the management strand in an attempt to see if I could make any more sense of imminent changes with commissioning and GP consortium. I felt slightly more informed but may have been better staying in with the dementia lecture, if only for my own personal need!

Saturday

First thing Saturday, a neurology session from not just any MSK physiotherapist, but David Butler, tried and succeeded to bridge the gap between 'us and them'. It was a very interesting look at the 'neural matrix'. A presentation from a physiotherapist using the silicon ankle foot orthosis gave another tool to put in the bag for our difficult patients with loss of foot stability.

Another session from David Butler, this time as key note speaker for both the neurology and MSK groups gave lots of food for thought on the biopsychosocial approach to patients. A model I think many of us do use but without giving it a name and not to the extent it is probably needed in most cases. Although he applied the model to the treatment of chronic pain, the emphasis was in its need to be applied to all our patients. Again the importance of looking at the whole of the patient and how we influence the brain was a key learning point.

The afternoon drew me again to a session on commissioning. This time a presentation from Professor Patrick Doherty on his cardiac rehabilitation programme and how he used evidence and cost savings to successfully gain commissioning in York. This was a very useful session and gave some valuable information on how we might go about and what information we need to gain commissioning for neuro rehabilitation services.

As ever a varied and interesting two days. If you have never attended Congress I do recommend it! I always find it refreshing to hear evidence to back up some practices we use and 'know' work. It is good to evaluate our practice and apply new knowledge based on what sometimes only seems a slight adaptation to what we already do.

Finally, to now go back to my work environment and feedback my new knowledge to colleagues and to then see the benefit it gives our patients, makes the whole weekend worthwhile, no matter how tired you feel after sitting for two days!

REVIEWS ARTICLES BOOKS COURSES EQUIPMENT

Reviews of research articles, books, courses and equipment 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.

BOOKS

Pocketbook of Neurological Physiotherapy

Edited by Sheila Lennon and Maria Stokes
Churchill Livingstone, London

Review by **Adine Adonis**, Clinical Specialist Neurophysiotherapist, Imperial College Healthcare NHS Trust

The *Pocketbook of Neurological Physiotherapy* is a concise guide to core concepts within current neurological physiotherapy practise. It is designed for working with neurological patients irrespective of the setting they may be seen in.

Section 1 explores the background knowledge required for an evidence based approach. Each chapter has clear concise explanations with good summaries provided in the accompanying text boxes and tables. The chapters are easy to read and understand covering the theoretical components, such as neuroplasticity in motor learning and motor control.

Section 2 explores clinical assessment guidelines for neurological physiotherapy. There are clinical decision making chapters for a wide variety of patient conditions, including those with limited potential for recovery and those with neurodegenerative disease. Outcome measures are also usefully included in this section and well described.

Section 3 covers areas such as cognitive perceptual and respiratory considerations, orthotic management and communication considerations.

The appendices helpfully cover neurological investigations, drug treatment, abbreviations and a glossary of terms.

Overall the book provides a useful, easy to read, quick reference guide for both neurological physiotherapists and physiotherapy students.

Running free: Breaking out from locked-in syndrome

By Kate Allatt
Accent Press Ltd, Glamorgan

Reviewed by **Joanna Killeff**

This was a fantastic book that I cannot recommend highly enough. It absorbed me on many angles and I couldn't put it down until I had got to the end.

Kate suffered a massive brain stem stroke leaving her with locked-in syndrome. She recounts her months in hospital; the difficulties, the successes, the emotions, the people involved in her eventual discharge from hospital nine months later. This is a book really worth reading.

This book is very insightful into the lives of the neurorehabilitation team – physiotherapists, OT's, speech therapists, doctors, nurses and clinical psychologist. It makes you think about how we are perceived, who we are really working with, what we hope for with a patient and why. It certainly made me question assumptions I have made as a physio and think about life from a patient perspective. We all want to be patient centred and are we? I think with the best possible intentions we often have our own agenda. I will certainly approach my next patient differently. If we feel frustrated, then this is even more exacerbated for the patient. This reading has already influenced my practise – my approach to patients as well as my teaching of students.

This book also touches your heart as a wife, a mother and a friend. I shed many a tear whilst reading, really imagining the emotions that must have been felt and realising how precious life is and how you just don't know what is around the corner. Kate was probably not the easiest patient, but my goodness me, what courage she must have to fight the system endlessly to get where she is today. She is an inspiration to us all, not just as professionals, but as people. Would I be as strong and achieved as much? I hope so.

Kate has done really well to write this book as she has. I think it is a useful adjunct to a students training, to get a glimpse of what is important to a patient. It is a real eye-opener to a qualified therapist. It is also an emotional, easy to read book for anyone interested in people.

COURSES

Exercise in Neurology

Edinburgh ACPIN study day
Saturday 4th June 2011
Training and Conference Venue, Edinburgh

Review by **Sophie Gardner**, Physiotherapy student, Queen Margaret University

ACPIN's regional representative, Dorothy Bowman was responsible for the organisation of the course, entitled 'Exercise in Neurology', which took place on Saturday 4th June 2011. The day was extremely informative and received well by all who attended. The course was open to ACPIN members, non-members and students with a keen interest in neurological physiotherapy.

The course was comprised of a series of theoretical-based lectures which explored the current evidence-base practice and barriers to exercise in a range of neurological conditions including: Parkinson's Disease (PD), Multiple Sclerosis (MS), Neuromuscular Disease (NMD), Spinal Cord Injury (SCI) and Stroke. Each lecture was excellently presented, by guest speakers who specialised in one of the aforementioned conditions.

The day was introduced by Bhanu Ramaswamy, who described exercise as

'The New Drug' for PD. Based on supporting evidence, Bhanu proposed that exercise minimises disease progression by promoting neuroplasticity and eliciting a neuroprotective effect. Emphasis was placed on the need for intensity and specificity to achieve these benefits. Some of the challenges faced by individuals with PD were discussed including: dual-tasking and freezing, which need to be accounted for when planning and implementing appropriate exercise programmes for these individuals.

Following on from this were MS specialists Jane Lough and Paula Cowan who outlined the benefits and recommendations for exercise in MS and highlighted fatigue as the major barrier to exercise in these individuals. The speakers stressed the importance of directing the individual toward achieving perceived control over fatigue, through pacing, working within limits and keeping activity diaries before engaging in exercise.

Gita Ramdharry began with a succinct overview of neuromuscular conditions (NMD) and their presenting problems, before discussing the evidence for exercise in these types of conditions. It was concluded that exercise in NMD is safe and has not been found to produce deleterious effects, however there is insufficient evidence to draw definitive conclusions about the benefits of exercise in these individuals. Caution should be taken with eccentric exercise on weakened muscles.

From a different viewpoint, guest speaker Oliver Davies delivered an interesting insight into higher level disability sport beyond primary care and rehabilitation, with the aid of a case scenario and video footage. Oliver highlighted the importance of knowing the sport and the individual in order to develop a client-centred, sport-specific training programme, to optimise performance.

To round up the day, John Dennis introduced the current guideline for the development of exercise after stroke services in community settings. Based on supporting evidence for exercise after stroke, guidelines state that life-long exercise programmes after stroke should be encouraged. The structure and content of a typical exercise after stroke class was outlined. John went on to stress the desirability of introducing group exercise classes within the community, run by qualified exercise instructors.

After hearing all the presentations, some overlapping conclusions were identified. Exercise was agreed safe and feasible for individuals with neurological disease, however, fatigue is likely to be a significant factor limiting exercise participation in these individuals. There was consensus on a combined approach to treatment in order to facilitate carry-over into functional performance.

As a student the study day helped to consolidate my previous learning about neurological conditions and provided an up to date overview of current practice in this area. My learning experiences from the study day will allow me to develop my future practice in line with current evidence and explore further some of the key concepts for 'Exercise in Neurology'. Overall a very well organised and informative day from which I am sure follow-up days would be welcomed.

WEBSITES OF INTEREST

This new feature is aimed to be a useful resource for members by recommending some of the multitude of websites available to help in our practice. Thank you to the regional representatives who have contributed suggestions this time. If you use or know of any websites that you think may be of interest to others please send them to Kate Busby at ksmoff@hotmail.com

Community Stroke Resource

www.improvement.nhs.uk/stroke/CommunityStrokeResource/tabid/204/Default.aspx

Jan Matthew MCSP
Community Stroke Team Project Lead,
Northampton, Stroke Improvement Programme
Associate

The Community Stroke Resource brings together and shares the learning and information the Stroke Improvement Programme has gathered so far about community stroke services. It comprises a collection of material including evidence from literature and research, business cases, inspirational presentations and documentation related to community stroke services. The information has been organised into twelve areas and aims to support innovative practice and the sharing of knowledge across rehabilitation.

It is a web-based resource so all the information is only a few clicks away. It includes a table with current models of service delivery and also one of competencies. It is practical, clinically useful information. It can be used by anyone wanting to: start a team; try to make a case for funding; improve their current team; or just to look at what others are doing and compare. There are contact details for other teams to encourage further sharing.

Other websites

www.wiihabilitation.co.uk/main.shtml
This is a website set up by a physiotherapist working in neurology designed to share her anecdotal experience and advice regarding the use of the Wii in rehabilitation. The information presented about the conditions is basic but the website does have up to date evidence based articles as references including the latest media clippings. Information also includes the set up of the Wii for rehabilitation and the latest games on the market and specifically which aspects of rehabilitation they can assist with. This is a potentially useful resource for departments with a Wii.

www.physiotherapyexercises.com/
This is a website for patients with spinal cord injury and other neurological disorders. It includes photographs and sketches of a comprehensive and wide range of exercises to encompass the holistic management of neurological patients, eg assisted cough. It also includes neurodevelopmental aspects for paediatrics. It is free and easy to use. A useful resource.

www.clinicalgaitanalysis.com
Useful teaching aid with videos of several neurological pathologies. Also biomechanical considerations of gait analysis, along with comments from website users.

www.wemove.org
Useful and informative about movement disorders including dystonia, restless leg syndrome, Huntington's disease, ataxia, etc. It is easy to use and provides useful links.

http://hces-online.net/websites/rescue/pubs/info_sheets.htm
Rescue trial cueing in PD. A website for providing information on mobility difficulties for patients with Parkinson's Disease. There are links to 15 printable information leaflets on mobility, cueing and freezing etc.

www.surveymonkey.com
Makes it easy to conduct, manage and analyse research, whether it be for ACPIN regional committees to process responses from their members or for individual clinical research projects. You are able to sign up free for the essentials to get you started.

REGIONAL REPORTS

East Anglia

Nicky Hill

There have been a few changes to the East Anglia ACPIN committee this year; after stepping down from the national committee and her role as *Synapse* editor, Louise Dunthorne was elected as the new chair for the region at our AGM in May. Paul Chapman has also joined the committee. Membership numbers are just shy of 150, record levels for the region.

In 2011 the committee has organised four study days and afternoons, the most recent being a *Pusher Syndrome study day* at Ipswich Hospital, run by Gemma Alder. Thanks to the support from the members – our 2011 courses have been very successful and many oversubscribed. East Anglia ACPIN has continued to heavily subsidise courses to enable them to be accessible to members with limited access to course funding from employers. We hope to continue to subsidise courses in 2012.

At the time of writing, the 2012 course programme is in skeleton format, but ideas include:

- Exploring, accessing and treating cognitive impairments
- Locomotion – two-day Bobath course
- Orthotics and spasticity
- Complementary therapies

An up to date course programme is available on the East Anglia page of the ACPIN website (www.acpin.net/eastanglia), please email me if you are interested in attending any of our courses.

Towards the end of this year we have planned to send a questionnaire to East Anglia ACPIN members to survey the membership on your needs for future courses. We really value your input into the course programme, so if you have any innovative course ideas or know of interesting speakers we would love to hear from you. We look forward to seeing you at our courses again in 2012.

London

Andrea Stennett

It's amazing how quickly 2011 is drawing to a close! We hope that you have enjoyed our study events thus far. We have been quiet over the summer months but there has been a lot of work going on behind the scenes.

The London committee remains stable in numbers as we bid farewell to Maria Garcia and welcome Maddie Fomroy to our committee. Maria we thank your for your hard work and wish you all the best in future endeavours.

Our final event for 2011 was very successful, working in collaboration with ACPVIR Dr Susan Whitney gave us food for thought in *The management of people with central vestibular disorders*.

We are in the process of finalizing the 2012 program. Please keep checking our website (www.acpin.net/london), *frontline* and iCSP for updates on courses.

We do value your feedback or comments, so if you feel strongly about a particular subject that you would like us to cover please contact us at londonacpin@googlemail.com or andstennett@yahoo.com

Wishing you all the best for 2012 and looking forward to working with you over the upcoming months.

Manchester

Stuart McDarby

Manchester has enjoyed a successful 2011 with bimonthly evening lectures and a study day that was well received by our members.

We decided not to put a lecture on in January this year and instead our programme commenced in March with the AGM and a patient demonstration by Bobath tutor, Linzi Meadows. As always this was a thought provoking and interesting evening that was well attended.

At the AGM we welcomed Dani Morby to the committee, which has retained much the same line up as 2010. We currently have Claire Robinson (chair); Anna Ziemer (secretary); Helen Dawson (treasurer); Stuart McDarby (regional rep) and Lorraine Azam (national executive committee), as well as Dani.

In May we held a *Saturday morning study workshop on the shoulder* that was well attended. This built on an evening lecture from 2010 and involved *MSK techniques with the neurological shoulder*. Both the format and content received very positive feedback and we are planning to run similar events in future.

July saw a familiar face in Julie Rigby, our former chair, providing a lecture around her Phd work on '*The experience of care home staff with stroke patients*'. This was held at Trafford General and led to some interesting discussion.

In September we had an evening lecture on *Ataxia* by Anita Watson (Lecturer in Physiotherapy at the University of Salford and in November we held an evening lecture on *Urology in neurology*.

As always we look to provide an interesting and stimulating programme that will appeal to staff working across the neurology spectrum. We are always grateful for ideas regarding possible speakers, topics and venues and welcome members contacting us at any time. We continue to try to use venues across the region and we are always thankful for the support received. ACPIN members from Cheshire and Lancashire (as well as other regions of course!) are always welcome and we would encourage you to contact us if you do not receive emails.

The Manchester committee is currently putting together the programme for 2012, so keep an eye open for emails and flyers!

Merseyside

Anita Wade-Moulton

Mersey ACPIN has gone through several changes of committee this year; babies seem to be the main cause of this! Membership is the highest it has been for some time at 54 members.

As a group we have hosted courses covering:

- *Neck and Head Treatment* by Clare Fraser BBTA tutor, a challenging and very informative course with lots of clinical relevance and a good level of neuroscience.
- *Vision and Balance Course* was well attended and clinically was very useful in helping to structure more informed treatment plan.
- A different format was used to our more recent courses/lectures when we hosted a *Patient Workshop* led by Sharon Williams this was a half day, it was well attended got lots of positive feedback especially considering the current climate when teaching with patients in the clinical environment is much more difficult.
- Our AGM was held as part of an *evening workshop on the Gym Ball*, the practical hosted by Maureen Moss was well attended and had good reports.

Evening lectures have covered *Post Polio*, *Management of Spinal Injuries* and *Devits Disease*. There has been mixed attendance to these but all who have attended lectures have given very enthusiastic reviews.

Our forthcoming lectures include:

- *Respiratory Management in Neuro Muscular Patients*
- *Shoulder function – an MSK bias*
- *Parkinson's Disease Management*
- ½ day *Behavioural dysfunction*
- *Lower limb and Gait* - Clare Fraser BBTA tutor

We are also working with Yorkshire and Manchester ACPIN to jointly host a day course by Ann Shumway-Cooke next year, so keep a look out for this very sort-after course!

All details of lectures and course will be emailed to members and will also appear on the ACPIN website when dates are confirmed.

Remember to please consider submitting any case reports, MSc papers or other interesting pieces for publication in *Synapse*!

Northern Ireland

Dr Jacqueline Crosbie

The ACPIN programme for Northern Ireland ran from September 2010 to May 2011, with monthly evening lectures. Attendances fluctuate and we would on average have around 20-30 people at each session. We usually offer the first session as a practical evening at the local brain injury unit. We have close links with clinical colleagues there and they have been able to incorporate a couple of patient demonstrations, which is very useful for any new graduates and acts as refresher for other members. The committee organises a mix of lecture and practical evening events. This year we joined with the local AGILE group to run a session on *vestibular rehabilitation*.

In March we partnered with the University of Ulster who were offering the *Constraint Induced Movement Therapy (CIMT) course* as part of a module in their MSc in Advancing Practice programme. ACPIN was able to link in for Day 1 offered as a taster day summarising the evidence for rehabilitation and the CIMT concept. Members were able to attend sessions given by leading experts Prof Gert Kwakkel (Netherlands) and David Morris (USA). Approximately 70 people were able to attend this one day programme and on the following four days the full CIMT training programme was offered. Some delegates undertook this as a module contributing the credit points for their MSc.

There continue to be ongoing changes to neurological service delivery across Northern Ireland, with an increase in early supported discharge schemes. There is a move towards streamlining and a reduction in duplication of services across trusts which have been amalgamated.

There have been some changes to the committee:

- **Chair**: Anne-Marie O'Kane
- **Secretary**: Carla McGuigan
- **Treasurer**: Sarah McConnell
- **Regional representative**: Dr Jacqueline Crosbi

Scotland

Gillian Crighton

ACPIN Scotland has enjoyed another good year, with excellent attendance at the *Exercise in Neurology* and *Functional Illness* courses.

With most of the previous committee members retiring this year, we have formed a new committee but still have space for more members. We meet four times a year in Perth. If you are interested please contact myself or the Chair on fiona.genney@nhs.net.

Remember you can apply to us for course funding up to £250, as long as you have been a member of ACPIN for a year or more. Please apply by email to fiona.genney@nhs.net, giving the full details of the course. All we ask is that you are prepared to share your learning with other ACPIN members after the course.

Our forthcoming programme includes *The Neuro hand* (Dundee), *Balance* (Inverness), *Electrical Stimulation*, *Sensory Re-eduation* and *Mental Imagery*. Further details, dates and venues will be included in a newsletter along with other local news.

Useful websites

- www.neurosymptoms.org
  An excellent self help website for patients with functional symptoms/conversion disorder/dissociative symptoms.
- www.ebrsr.com/reviews_list.php
  A comprehensive and up-to-date review of stroke rehabilitation.
- www.stroketraining.org
  Contains core competency stroke training and 10 advanced modules on the multidisciplinary management of stroke.

If you have any ideas for courses / events or would like to share useful websites please do not hesitate to contact me at gilliancrighton@nhs.net

South Trent

Katy Coutts

The summer of 2011 has been fairly quiet for South Trent, though we have still managed to fit in a few evening lectures and a weekend course.

We held an evening lecture in July on *The Use of Ultrasound Biofeedback* which was very informative. Having learnt the principles behind how ultrasound could be used when working with neuro patients (particularly with reference to educating patients on trans abs activity), we all got to have a go at using it and being a model-very beneficial! *The Bobath workshop* in June, with an emphasis on gait. Initial feedback was very positive and we will receive further feedback and analyse this at our next meeting.

In 2012 we plan to run a course by Mary Lynch-Ellerington on the 24th and 25th February; more details of this should be available in October, following our regional meeting.

The committee remains strong at present, though we are always keen to hear from and meet our regional members. We would also welcome ideas for courses and offers for venues. If you would like to get in touch please email myself at katy.coutts@nhs.net). We look forward to hearing from you and welcome your continued support.

South West

Helen Madden

South West ACPIN has had a busy year with many successful events and a growing committee. A Devon subgroup has now formed and their first event was held in October with an update on the latest findings on human anatomy. The Devon subgroup plans to organise further evening lectures and courses so making courses more accessible to all our members.

Jakko Brouwers is also taking on forming a separate Wales ACPIN region which we hope to be in place by the end of the year with a committee. We will continue to link with them with course planning but we wish them every success with this new venture once finalised. They held their second event in July which was a practical course on the *Pusher syndrome*.

South West ACPIN events continue to be well attended with courses and evening lectures on *Evidence based Physiotherapy in Huntingdon's Disease* and a summer social exploring the assessment and management of the shoulder. We are currently continuing to plan our course programme for 2011-2012 but we hope to be running a *Multiple Sclerosis course* alongside the Multiple Sclerosis Trust in early 2012 with *Neuropilates in Devon* and other exciting events to be confirmed. Courses will be continued to be advertised on our regional page on the ACPIN website, interactive CSP and via email to our members. Places for courses will only be confirmed once a completed application form and payment has been received by the course organiser.

In 2011 we have launched a new initiative for South West ACPIN members to potentially access course funding twice a year to enhance the individual's physiotherapy skills in managing neurological patients. Further details of this new initiative including the policy and application form are available on our regional page on the ACPIN website. We will review this at the end of 2011 but we hope our members take advantage of this potential source of funding to attend courses and conferences.

Finally thanks to Lizzy Shaw who has been the chairperson for the South West over the last few years and is sadly stepping down from the committee. Lizzy has worked very hard for the region organising events and the committee so we thank her for all her hard work and enthusiasm. As ever we would welcome more committee members wherever you may be in the South West.

Please get in touch with us if you wish to find out more information about being on the committee as we always welcome new members, or ideas/suggestions for future courses Helen.Madden@banes-pct.nhs.uk

Surrey and Borders

Emma Jones

Surrey and Borders ACPIN has had a successful start to 2011. This commenced in February, with the AGM and an informative evening lecture by Thamar Bovend'Eerdt on *Mental Practice with Motor Imagery in Rehabilitation*. The AGM resulted in changes to the committee with Anna Lavelle stepping down as chair due to the pending arrival of her new baby and Kate Busby as regional representative after four years of this role. Luckily for us they both still remain committee members with Kate Busby also taking on the exciting role as *Synapse* coordinator within the national committee. Michelle Green was elected to become chair, Emma Jones the regional representative and Rachel Ross, committee secretary. Clare Davies continues her contribution as treasurer.

At the time of this being printed, this year's programme has varied by incorporating two practical based courses. This has included a locomotion workshop run by Nikki Penny in June and a *gym ball course* run by Janice Champion in September. These workshops have aimed to provide members with a dynamic and practical aspect to the programme. We hope this has been useful and enjoyable.

The programme next year will return to four evening lectures and a study day in September 2012. This is currently to be confirmed however we are considering this being related to *technologies within rehabilitation*.

Ongoing events with be forwarded to Surrey and Borders ACPIN members by email and may be advertised in *frontline* and on the ICSP website, so keep your eyes peeled!

Please do not hesitate to contact me with any queries or suggestions for future programmes on emrob222000@yahoo.co.uk. We look forward to seeing you all at future events!

Wessex

Jennifer Barber

We have had a few changes within Wessex ACPIN. We thanked Anna Gould and Louise Johnson (joint-chair) and Hayden Kirk and Mary Vincent (joint regional representative) for their hard work over the last couple of years. We welcomed new chair of Wessex ACPIN, Katie Bright. Jenny Barber is the new regional representative and Gina Turner continues as Secretary. We have had an increase to our committee member numbers and our membership for the region continues to be a healthy size.

We have had some successful events over the past couple of months. At Christchurch Hospital, in May this year, Emily Rogers gave an interesting insight into her time spent in Ghana. This was part of a joint project, which Wessex ACPIN is supporting. In July, Band six physiotherapists from Southampton and Portsmouth outlined the framework, processes and results of projects that they have been involved with over the last year. This was to share local practice and looked at *exercise prescription* and *outcome measures*. Our September event was an evening *promoting research*, and featured Jane Burridge, from Southampton University, talking about *Clinically Driven Research*. This was a two part event followed by an evening event at Southampton University, in October. We are also looking to organize an *ataxia study (half) day* in November.

Within the Wessex region, Winchester & Eastleigh NHS Healthcare Trust, is merging with Basingstoke and North Hampshire NHS Trust. Hampshire Community Health Care has merged with Hampshire Partnership Foundation Trust from April 2011 to become Southern Health Foundation Trust. Solent NHS Trust is developing an early supported discharge team for stroke patients within the community.

West Midlands

Katherine Harrison

West Midlands ACPIN is seeing some changes in 2011 both on the committee and how we plan to promote neurological physiotherapy in the region.

We say a (hopefully temporary) goodbye to committee member Jayne Priest and Trudy Pelton our minute secretary. Both have been dedicated members of the committee for some time and we would like to thank them for all their hard work. We would also like to welcome new committee member Cameron Lindsay who has volunteered to be the regional representative taking over from myself. It would be great to see some more new faces in the committee, so if you are interested contact us and come along to the meetings to see what you think (biscuits are often provided!)

Since writing in the spring edition of *Synapse* West Midlands ACPIN has held two evening lectures. *Cognition Matters* by Dr Wai-Ling Bickerton in March and *Using TMS to Understand the Cerebellum* by Professor Chris Miall in June. Dr Wai-Ling Bickerton spoke enthusiastically about the *BCoS (Birmingham Cognitive Screen)* they have developed. The BCoS provides a cognitive profile for brain injured patients, inclusive for individuals with aphasia or neglect, a very interesting assessment tool to learn about. Professor Chris Miall discussed research (including his own) on the cerebellum. His clear explanations helped make this complex area more understandable. Both lectures were well attended and free to ACPIN members.

The next course we have planned is a *MS study day*. This will hopefully be in late November or early December and will feature local speakers.

Following on from our successful discussion groups earlier in the year and lots of positive feedback and suggestions from the West Midlands ACPIN Members we are starting debates on topics of interest within neurological physiotherapy. Each debate will discuss two topics (a main topic and a back-up) with a couple of people arguing strongly for or against the topic with a vote at the end. At the time of writing we aim to do the first debate at the end of September/beginning of October on *core stability – is it a waste of time?* with a back-up topic of *stretching – effective or not?* This debate will be held at the University of Birmingham but we plan to time hold future debates in other venues around the West Midlands to make it more accessible to our members.

As always West Midlands ACPIN welcomes any suggestions or questions you may have. Please do not hesitate to contact new regional representative Cameron Lindsay via email at camlin3@hotmail.com.

Yorkshire

Kirstie McLaren

Again we have had a busy six months since the last *Synapse*. This has included holding our AGM with an excellent study day on *rehabilitation of the upper limb*. Mary Lynch-Ellerington presented in the morning including a brilliant patient demonstration, despite the awkward set up in the venue. This was followed in the afternoon by a presentation from Glyn Blakely of Saeboflex including feedback on work in Norway, using it as an aid to function. As to be expected this prompted a lively debate around the different methods of working and how different physiotherapists utilise a variety of different techniques with our client group. Feedback from the day was very positive and shows that as a group of professionals we are all striving to give our clients the best evidence based, client centred treatment that we can.

During the AGM we also recruited a new full member and would like to welcome Veronica Rufus to the committee. We also recruited a number of volunteers from across the region who were keen to help us organise courses in a variety of different venues. One of whom is Ester Lockwood who has since joined the committee and our welcome is extended to her. Whilst Sarah Kelman, our treasurer is back from maternity leave, Nicky Buck, our membership secretary is now off on maternity leave.

Yorkshire committee work hard to provide a wide and interesting variety of courses and are always grateful for any help that we can get. It really is a matter of doing as little or as much as you would like, so if you are interested please contact me.

Other exciting courses we have run recently include a *head and neck* day course by Bobath tutor, Paul Johnson, a day course on *pusher syndrome* and on the *foot* by Linzi Meadows. We have also run various evening lectures on items such as *outcome measures* and *HIV in neurology*, that have been reasonably well attended.

Never ones to rest on our laurels, we have a busy programme being arranged already for next year hopefully including; *a movement science day course* and repeat of our previously run *ataxia course*. So please keep an eye out on the website for further details.

Again please feel free to email myself, or the committee if you have any questions, suggestions, or even complaints. We aim to provide a service that is tailored to the needs of physiotherapists in our area.

Look forward to seeing more of you over the coming few months!

WRITING FOR SYNAPSE

***Synapse* is the official peer-reviewed journal of the Association of Chartered Physiotherapists in Neurology (ACPIN). *Synapse* aims to provide a forum for publications that are interesting, informative and encourage debate in neurological physiotherapy and associated areas.**

***Synapse* is pleased to accept submitted manuscripts from all grades and experience of staff including students. We particularly wish to encourage 'novice' writers considering publication for the first time and ACPIN provides support and guidance as required. All submissions will be acknowledged within two working weeks of receipt.**

Examples of articles for submission:

Case Reports

Synapse is pleased to accept case reports that provide information on interesting or unusual patients which may encourage other practitioners to reflect on their own practice and clinical reasoning. It is recognised that case studies are usually written up retrospectively. The maximum length is 3,000 words and the following structure is suggested:

Title – this should be concise and reflect the key content of the case report.

Introduction – this sets the scene giving background to the topic, and why you consider this case to be important, for example what is new or different about it? A brief overview of the literature or the incorporation of a few references is useful so people can situate the case study against what already is known.

The patient – give a concise description of the patient and condition that shows the key physiotherapeutic, biomedical and psychosocial features. Give the patient a name, but not their own name. Photographs of the patient will need to be accompanied by explicit permission for them to be used. Only relevant information to the patients' problem should be included.

Intervention/method – Describe what you did, how the patient progressed and the outcome. Aims, treatment, outcomes, clinical reasoning and the patient's level of satisfaction should be addressed. Indications of time scales need to be considered.

Implications for practice – Discuss the knowledge gained, linking back to the aims/purpose, and to published research findings. Consider insights for treatment of similar patients, and potential for application to other conditions.

Summary – List the main lessons to be drawn from this example. Limitations should be clearly stated, and suggestions made for clinical practice.

References – the Harvard style of referencing should be followed (please see *Preparation of editorial material* below).

Original research papers

These should not exceed 4,000 words and papers should include the following headings:

Abstract – (maximum of 300 words)

Introduction

Method – to include design, participants, materials and procedure

Results

Discussion

Conclusion – including implications for practice

References

Abstracts of thesis and dissertations

Abstracts from research (undergraduate and postgraduate) projects, presentations or posters will be welcomed. They should be up to 500 words, and broadly follow the conventional format: introduction, purpose, method, result, discussion, conclusion.

Audit report

A report which contains examination of the method, results, analysis, conclusions of audit relating to neurology and physiotherapy, using any method or design. This could include a Service Development Quality Assurance report of changes in service delivery aimed at improving quality. These should be up to 2,000 words.

Sharing good practice

This *Synapse* feature aims to spread the word amongst ACPIN members about innovative practice or service developments. The original format for this piece started as a question and answer session, covering the salient points of the topic, along with a contact name of the author for readers to pursue if they wish. Questions were loosely framed around the following aspects (this would be for an audit)

- What was the driving force to initiate it?
- How did you go about it?
- What measurements did you use?
- What resources did you need?
- What did you learn about the process?
- How has it changed your service?

However recent editions have moved away from this format, and provide a fuller picture of their topic eg *Introducing a management pack for stroke patients in nursing homes* (Dearlove H Autumn 2007), *An in-service development education programme working across three different hospitals* (Fisher J Spring 2006), *A therapy led bed service at a community hospital* (Ramaswamy B Autumn 2008) and *Establishing an early supported discharge team for stroke* (Dunkerley A Spring 2008).

Product news

A short appraisal of up to 500 words, used to bring new or redesigned equipment to the notice of readers. This may include a description of a mechanical or technical device used in assessment, treatment management or education to include specifications and summary evaluation. Please note, ACPIN and *Synapse* take no responsibility for these products, it is not an endorsement of the product.

Reviews

Course, book or journal reviews relevant to neurophysiotherapy are always welcome. Word count should be around 500. This section should reflect the wealth of events and lectures held by the ACPIN Regions every year.

OTHER REGULAR FEATURES

Focus on...

This is a *flexible space* in *Synapse* that features a range of topics and serves to offer different perspectives on subjects. Examples have been a stroke survivor's own account, an insight into physiotherapy behind the Paralympics and the topics of research, evidence and clinical measurement.

Five minutes with...

This is the newest feature for *Synapse*, where an ACPIN member takes 'five minutes' to interview well-known professionals about their views and influences on topics of interest to neurophysiotherapists. We are always keen to receive suggestions of individuals who would be suitable to feature.

PREPARATION OF EDITORIAL MATERIAL

Copies 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.

The first page should include:

- The title of the article
- The name of the author(s)
- A complete name and address for correspondence
- Professional and academic qualifications for all authors and their current positions

For original research papers, a brief note about each author that indicates their contribution and a summary of any funds supporting their work.

All **articles should be well organised and written in simple, clear, correct English**. The positions of tables and charts or photographs should be appropriately titled and numbered consecutively in the text.

All **photographs or line drawings** should be *at least* 1,400 x 2,000 pixels at 72dpi.

All **abbreviations** must be explained.

References should be listed alphabetically, in the Harvard style. (see www.shef.ac.uk/library/libdocs/hsl-dvc1.pdf) eg:

Pearson MJT *et al* (2009) *Validity and inter-rater reliability of the Lindop Parkinson's Disease Mobility Assessment: a preliminary study* Physiotherapy (95) pp126-133.

If the article mentions an **outcome measure**, appropriate information about it should be included, describing measuring properties and where it may be obtained.

Permissions and ethical certification; 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.

SUBMISSION OF ARTICLES

An electronic and hard copy 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* coordinator Kate Busby at: ksmoff@hotmail.com

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NOVEMBER 2011

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