University of Central Lancashire

Providing enhanced Speech and Language Therapy

using computer technology

Service evaluation report

by

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for

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Executive Summary

Providing enhanced Speech and Language Therapy

using computer technology: Service evaluation report

Service Innovation

There is an emerging evidence base to suggest that a combined approach (traditional direct speech therapy plus computer therapy) for people with communication difficulties following a stroke may improve the connected speech of even chronic and severely non-fluent speakers (McCall et al, 2009). The software applications used in this service initiative offered patients the opportunity to take more control over their own therapy and the amount they practice, as well as to be able to monitor their progress using computer software systems.

The Speech and Language Therapy (SLT) department, for the Adult and Older People Division (AOP), within North Lancashire Teaching Primary Care Trust (NLtPCT) won an award through the North West (NW) NHS Innovation scheme to implement this initiative from March 2010 to May 2011, following a successful pilot in partnership with Blackpool Council.

The aims of the innovation were to

- combine traditional 1:1 SLT and computer therapy as a service delivery model
- use computer software therapy to increase access to therapy for people needing more SLT than can be provided on a 1:1 basis
- provide computer therapy to patients in acute stage of stroke whilst resident in hospital
- provide therapy groups for outpatients to offer intensity of treatment
- work in association with our partners at the Stroke Association and Blackpool Hospitals Trust
- evaluate the initiative with a view to informing SLT service delivery.

Expected outcomes included

- enhanced therapy experience for patients
- optimising the skill-mix of the therapy team
- demonstrating value-for-money of the service

Analysis of patients' use of computer-based therapy

- Total of **272 patient practice hours** in group sessions (216 hours on StepByStep + 56 hours on React2 software programmes)
- **Over 200 additional hours** of therapy practice compared to previous traditional direct individual SLT contact
- Individual patient progress analysis

Recommendations for future service delivery

The following key issues are highlighted for consideration before further roll-out of this service innovation, to maximise the potential for impact:

- **Partnership and collaboration** between the SLT team, patients/carers, secondary care staff, voluntary sector
- **Enhanced level of service provision** – that the computer-based therapy should be provided as supplementary to, not as a substitute for, the currently commissioned service
- **Financial support** is required to sustain this initiative to deliver a value for money service – the cost is minimal in relative terms, as the hardware and software have already been purchased, but there will be the need to renew licence and for software upgrades

Recommendation for future research design/s to build on this service evaluation pilot

This service evaluation has generated indicative findings related to aspects of delivery of this new way of working. Detailed recommendations are made for future research designs, including the development of appropriate and relevant patient-reported outcome measures.

- **Single case series of intervention studies -** to determine optimum patient selection regarding their language profile pre/post assessments
- **Volunteer versus carer support** to compare the effectiveness of carers or other individuals who could support the patient's practice sessions
- **Skill mix of the SLT team** – to guidelines for optimising clinical and cost effectiveness

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1. Background to the service innovation

1.1 Speech and Language Therapy interventions in post-stroke aphasia

There are an estimated 150,000 people who have a stroke each year in the UK. The National Stroke Strategy specifies access to 'active therapy' for all patients who require it and are able to benefit from it:

> *"Patients with stroke are offered a minimum of 45 minutes of each active therapy that is required, for a minimum of 5 days a week, at a level that enables the patient to meet their rehabilitation goals for as long as they are continuing to benefit from the therapy and are able to tolerate it"*

*(*NICE Clinical Guidelines Quality Standards Programme, Quality Statement 7: *p15)*

Around one third of stroke admissions will need speech and language therapy (SLT), in addition to SLT referrals from the community. The population served by Blackpool hospital includes a significant proportion of elderly people. In 2008/09 stroke admissions totalled 781.

The following description of this service innovation comprises the project proposal which was made by Veronica Southern, Principal SLT (Rehabilitation).

1.2 Aims of the Service Innovation

An audit conducted in 2005 by the Blackpool SLT team revealed that they were offering only 50% of the two hours therapy each week recommended by the National Stroke Strategy (i.e. a maximum of one hour a week was offered to patients on average).

The National Stroke Strategy states that ongoing Speech and Language Therapy (SLT) is necessary to promote the recovery of the person who has had a stroke. It also suggests that services need to keep abreast of technological developments. The SLTs in North Lancashire recognised that they are a small team of health professionals but were keen to 'raise their game' (Healthier Horizons). This innovative service aimed to remove barriers to patient recovery using 21st Century technology to provide enhanced recovery and to support patients to 'manage their own conditions' (HH). The TCS document states that the time is right for 'reforming systems' to build the strong organisations and incentives needed to respond to the needs of people in their communities.

The challenge of trying to provide sufficient therapy for stroke recovery (in line with national guidelines) by a small team of therapists, presented an opportunity for SLTs to think smarter and to look to current guidelines for support. Transforming Community Services (TCS) document states 'to transform peoples' experience of community services, it is necessary to 'harness the energy and experience of all front line staff', and the SLT team were ready to look at new ways of working. It was acknowledged that it would not be possible for patient need to be met by current service provision. There is an emerging evidence base to suggest that results indicate a 'combined approach (direct SLT and computer therapy) may be helpful in improving the connected speech of even chronic and severely non-fluent speakers' (McCall et al, 2009). The SLT team first ran a pilot group to provide enhanced therapy using computer technology using Council equipment and premises, which was followed by the bid

for the current service innovation project. Indicative findings from the pilot project had showed evidence of considerable increase in therapy practice hours. For example one individual patient received seven hours of therapy using traditional methods during a three month period in early 2010, compared with 24 hours of computer therapy received during the first three months of this pilot innovation.

The SLT service in North Lancashire collaborated with Blackpool, Fylde and Wyre Hospitals NHS Foundation Trust (including Clifton and Rossall Hospitals) and the Stroke Association to deliver enhanced speech and language therapy using a computer-based programme. This innovation aimed to increase access to therapy for greater numbers of patients than could be seen for traditional face-to-face therapy, as well as improving recovery potential for the patients taking part.

The service innovation was focused on using computer software therapy to provide increased access to therapy for patients on an intensive basis, utilising the same number of staff currently employed but increasing productivity. It additionally aimed to enhance patient experience by choosing when and where to access their therapy. The proposal for this service innovation project was founded on the core principles of the Department of Health's quality agenda (QIPP):

- Raising quality standards
- Encouraging innovation
- Improving productivity
- Developing prevention

Additionally, the proposed service innovation matches closely with the NHS NW Strategic Aims:

- Improving health and well-being for the NW population
- Optimizing the delivery of quality healthcare in the most appropriate setting
- Being recognized as a world-leading health system

The brief synthesis of the research evidence base discussed above has focused predominantly on traditional, direct language therapy interventions. Evaluations of language outcomes for patients using these software packages are also noted to be underway. The current evaluation aimed to focus on the way in which this initiative was implemented within the local SLT service, to generate recommendations for future roll-out. The software providers confirmed that there have been no previous evaluations of the impact of the service delivery model.

Specific professional issues were identified as relevant priorities. These included the skill-mix and use of SLT Assistant staff, as well as the need for service user consultation (in line with the NHS Outcomes Framework, 2010).

1.3   Implementation of the Service Innovation

Delivery and skill-mix

Computer language therapy was offered to patients in the acute stage of their stroke (involving the staff from the Acute Hospitals Trust, as an integral element of their recovery programme), whilst still resident on the Stroke Ward. This aimed to maximise their recovery at the crucial initial stage and offer them intensity of treatment.

Groups of outpatients were also invited to attend therapy groups where they had access to therapy software-loaded laptops. These groups were based in hospital settings and some were run in conjunction with groups held by The Stroke Association. These patients worked in a group setting supervised by an SLT or SLT Assistant (SLTA). They then worked individually (whilst still at the group) at a laptop on a programme tailored to their language level, as determined by the SLT. These groups were rolled out in two settings in the district and were led by the SLTA. This method of service delivery improves the amount of therapy the patient can obtain and thereby increase their recovery potential.

The delivery of this innovation comprised a shared responsibility by members of the SLT team. The SLT had assessed the patient and tailored the software package by loading a pre-defined profile that determines the most appropriate entry level of exercise for each patient. The SLTA undertook responsibility for managing the group practice sessions at each site, for oversight of the patients' practice in these sessions, where they are supported by their own carer (generally a spouse). The SLTA requested re-assessment or advice from the managing SLT as required. Hence the therapy innovation is delivered as a partnership, utilizing the skill-mix of the SLT team.

Clinical outcome measures

The software packages incorporate a visual, calendar-based results log, to enable therapists to monitor the progress of each patient. The outcome data automatically generated by the software package comprised a record of the total practice time spent by patients on the computer software package over a three month period (August – December 2010).

The total number of hours of patient practice time in a three month time period (under supervision by the SLTA in a group setting) was compared to the total number of hours of direct contact in traditional therapy with an SLT for an equivalent period prior to the launch of this innovation. These calculations also provide an indicative cost-saving for this innovative model of service delivery; although a systematic cost evaluation was outside the scope of this evaluation.

Patients worked in a group setting and/or work individually to improve their language skills, (whilst still at the group) at a laptop on a programme suited to their language level, as determined by the SLT. The patients could book in to use the programme when convenient to them and when the equipment is available, throughout the week.

Patients owning their own computer at home, could access home licences (from a limited supply) for the software from the SLT Department.

Each SLT had a software-loaded laptop thereby individual 1:1 therapy sessions can be used to assess patients' suitability for the computer therapy and patients can be introduced to this service delivery model.

SLTs worked with partners from The Stroke Association. Partners at Blackpool Council based at the Centre for Independent Living (CIL) on Whitegate Drive, Blackpool have purchased two React2 software licences. The Assistant Practitioner on the Stroke Ward at Blackpool Victoria Hospital became a "Champion" for this service innovation and has taken responsibility for providing access to the computer tablets for patients on that ward.

1.4 Key features of the software packages

The service innovation comprised the implementation of a computer-based therapy approach using the React2 and StepByStep Aphasia Therapy software packages. These are specialist clinical packages designed to provide structured, intensive therapy practice, beyond what can be achieved in traditional face-to-face therapy. The use of appropriate computer-based therapy is advocated by the professional body as a resource to enable the best use of SLTs' time, "both in terms of benefit to the patients and cost-effectiveness" (RCSLT Resource Manual for Commissioning and Planning Services, 2009, p18).

The programme is available commercially with a clinician licence, which can be installed on a single computer and be used by an unlimited number of clients. It is also available as a home licence, to be installed on the patient's own computer for their exclusive use. This service innovation project provided for the purchase of laptops and multi-user licences, as well as 90-day home use licences for patients who had their own computers.

The rationale for the development of this computer-based approach for word-finding difficulties in post-stroke aphasia is under-pinned by the theory of neuroplasticity (Mortley et al, 2003). Evaluations of the effectiveness of this approach have comprised experimental case study designs (Mortley et al, 2004). The evaluation of the service innovation incorporates the clinical outcomes of the patients within this project, but has a broader remit, as described below in section 1.5.

Key features of the software packages include:

- Pre-configured client profiles to reduce set-up time
- Exercises for auditory discrimination, sound production, word-finding and sentence production
- Designed for clients to use at home independently
- Exercises are pre-configured in structured, incremental sequences, reducing the need for face-to-face sessions
- Therapist videos explain the purpose of each exercise
- Personal vocabulary can be loaded to ensure that a client works on the most relevant words
- Exercise sequences and exercises can be edited if required.

1.5 Evaluation Design

Stakeholders in this service innovation included all of the following: Stroke Ward staff, IT staff, SLTs, Blackpool Hospitals Trust site managers, The Stroke Association, Blackpool Council staff at the CIL, NLTPCT managers, NHS NW funders, patients.

It was agreed that the evaluation design would comprise a mixed methods approach, for the purpose of integrating the quantitative records of time spent on the software practice, with the reported perceptions and experiences of the service users and the therapy team delivering the innovation.

The agreed evaluation plan comprised the following elements:

- Comparative demographic patient data at recruitment (time post-stroke, health status etc).

- Amount of therapy being received per patient per week.

- The analysis of PAS data in conjunction with the Trust's Clinical Audit Department.

- Computer software activity data and outcomes.

- Stakeholder perspectives - independent data generated by the independent researcher
    - Anonymous questionnaire for all SLT staff
    - Nominal Group session with SLT team members
    - Interviews with SLT Manager and SLT Assistant
    - Interviews with purposive sample of up to 5 patients/carers.

2 Patient profiles

2.1 Patient eligibility criteria

Referrals for patients to access the service innovation project were accepted as per the Department's normal referral criteria. There was the potential for all existing and new patients to be referred to access this enhanced therapy model.

The profiles of the participating patients is presented below (Table 2.1). These data show that the range of severity of the patients' language difficulties included the full spectrum (mild – moderate – severe), in both receptive and expressive language competences. Two patients (B, C) additionally had motor speech difficulties (dysarthria and dyspraxia), which are aspects that would further compromise the impact of their functional difficulties in communication.

The patients in this cohort also varied in the length of time post-stroke (range = 7 months – 33 months post-stroke). This is known to be of particular importance in relation to the evidence base for the influence of timing on effectiveness of language intervention in post-stroke aphasia, although it is recognised that the SLT team have expertise in monitoring a patient's receptivity and readiness for language therapy.

2.2 Patient profiles pre-innovation

Table 2.1 Patient profiles

Patient ID	Clinical descriptor: *mild, moderate or severe expressive dysphasia or mild, moderate severe comprehension. Any other relevant information*	Time in months since first SLT contact
A	Moderate expressive dysphasia	18
B	Severe expressive dysphasia Mild receptive dysphasia Severe dyspraxia	13
C	Severe expressive dysphasia Severe dysarthria	20
D	Moderate expressive dysphasia	30
E	Mild-moderate receptive dysphasia Moderate expressive dysphasia	33
F	Mild-moderate receptive dysphasia Mild-moderate expressive dysphasia	21
G	Moderate receptive dysphasia Moderate expressive dysphasia	23
H	Severe receptive dysphasia Severe expressive dysphasia	15
I	Mild receptive dysphasia Mild expressive dysphasia	31
J	Severe expressive dysphasia	7
K	Moderate expressive dysphasia	18
L	Severe receptive dysphasia Severe expressive dysphasia	31

3. Log of therapy practice time on software packages

3.1 StepByStep software

The data presented in the tables below represent the 17 patients attending the Clifton and Rossall groups. These data were collected from group sessions between 27th August to 17th December 2010. The results presented below comprise

- Usage data as a group in terms of hours of therapy delivered (Table 1)
- Usage data on an individual patient basis. (Table 2).

3.1.1 Group Analysis

Table 3.1 shows the usage data per patient on a monthly basis in the 2 groups. Please note this is only usage data from StepByStep software and does not include React2.

The usage data indicates that a **total of 216 hours** of computer therapy has been delivered from 28th August 2010 to 17th December 2010 from the two groups: **64 hours** being delivered in Clifton and **152 hours** in Rossall.

As a comparison to the time spent on computer practice, a figure has been calculated for the total number of hours of traditional direct therapy input over a 3 month period before this innovation project started. For example September- November 2010 gives 3 full months data. In this case **181 hours of additional therapy** has been delivered in this 3 month period from these 2 groups**.**

It should be noted that seven of these patients had been given a 90 day community licence, and so had undertaken additional practice at home. A future research study could access and incorporate these additional usage records from within the home setting, to calculate more precise total practice hours for economic modelling; which was outside the scope of the present evaluation.

Table 3.1 StepByStep

| Client | Time spent per month (hours/mins) | | | | | Total |
	August	September	October	November	December	
C2		2.50	left group			Clifton group
C7*	1.22	4.35	4.48			
C8*	1.06	6.08	5.40	1.55	3.40	
C10*		6.01	9.08	8.25	3.05	
C12*				2..35	4.33	
Clifton total	2.28	19.30	19.36	12.55	11.18	64 hours
R1*	0.26	8.35	2.21	1.40		Rossall group
R2	0.43	7.45	React	1.55 + React	left group	
R4	1.04	5.54	3.36	2.28	3.02	
R5*	0.46	6.18	6.25	7.42	2.16	
R6	0.45	5.59	0.36 + React	React	React	
R7	0.40	2.05	left group			
R8	0.52	8.43	8.18	9.13	3.50	
R9	0.27	6.49	8.15	5.28	left group	
R10	0.41	8.46	left group			
R11	1.24	2.44 + React	React	React	React	
R12*				6.53	4.11	
R13				0.47	0.43	
Rossall total	8.16	63.38	29.38	36.06	14.02	
Total	10 hours	83 hours	49 hours	49 hours	25 hours	152 hours
TOTAL						216 hours

(Contributed by Dr Jane Mortley)

3.1.2 Individual patient analysis

Table 3.2 (on the following page) presents the results for individual patient when using StepByStep within the two groups. These data allow the SLT team to undertake direct comparisons with therapy delivered prior this service innovation, using the routine data available from the internal patient record system. For example, the SLT team could review for any patient the amount of therapy delivered during the innovation project to a 3 month period before having access to computer therapy. As stated above, an accurate record would need to include data records form the patient's home computer if they have been given a community or home licence.

Client	start date	end date	Pre-defined Profile	no of times attended the group	total time spent (hours/minutes)	total exercises	average attempt per exercise
C2	03/03/2010	10/09/2010	Word D	3	2.50	6	1
C7*	26/08/2010	18/10/2010	Default	13	9.24	129	1
C8*	26/08/2010	13/12/2010	Default	21	17.24	202	1
C10*	03/09/2010	17/12/2010	Word C	27	26.40	242	2
C12*	15/11/2010	12/12/2020	Default	9	7.08	46	5
R1*	31/08/2010	16/11/2010	Word C	15	12.26	175	1
R2	31/08/2010	18/11/2010	Word D	13	10.24	135	1
R4	31/08/2010	16/12/2010	Repeat A	22	16.03	212	6
R5*	27/08/2010	14/12/2010	Word C	27	23.27	77	2
R6	31/08/2010	16/11/2010	Word D	9	7.20	71	1
R7	31/08/2010	14/09/2010	Match	3	2.45	7	1
R8	31/08/2010	16/12/2010	Word C	31	30.57	280	4
R9	31/08/2010	18/11/2010	Default	23	20.57	127	3
R10	27/08/2010	30/09/2010	Repeat A	11	9.28	149	4
R11	27/08/2010	23/09/2010	Match	5	2.45	20	2
R12*	09/11/2010	16/12/2010	Repeat A	11	11.05	58	8
R13	23/11/2010	14/12/2010	Word A	2	1.29	17	4

Of the 17 people who attended the groups, 3 left after only a few weeks, indicating that this form of therapy was not suitable for them (C2, R7, and R10). The other 14 members have attended on a regular basis suggesting that they find this form of therapy acceptable and motivating. In-depth interviews with some members will be able to explore this further.

Of the 14 people who attended regularly, 7 have already been given a 90 day community licence. This indicates that the aim of the group to build up the person's confidence in using the computer independently is being met. It shows that as a service you are able to move people on to being independent home users where they have opportunity for intensive daily therapy if appropriate. The attendance of these people at the group has reduced once a community licence has been given (C7, C8, C10, R1, and R5) enabling new patients to join the group.

Table 3.2 shows the range of profiles that have been assigned to group members. This suggests that the objective of tailoring the software to individuals by defining a prescription that is followed through by the SLTA is being met.

In order to get the most from StepByStep it is advised that the patient does repetitive practice at a step they are finding difficult before moving on to the next step in the sequence. A few patients have been identified as moving through the spelling sequence too quickly and are therefore not likely to get maximum benefit from the software. These are identified in Table 3.2 as those with high attendance and high usage but only 1 average attempt per exercise. These are C8, R1, R2, and C7. This has been discussed with the SLTA, and she will try to encourage patients to let the software automatically move up a step in a spelling sequence once criteria of 85% on 2 occasions has been achieved, rather than the patient moving up with the right arrow button.

Potential additional data collection which could be incorporated into a future research study to achieve an accurate calculation of time spent as well as records for specified practice activities.

- Collect the keyfiles from the home computers of **C7, C8, C10, C12, R1, R5, and R12.** This will collect the additional therapy that has been conducted at home.
- Collect the keyfiles of people using the StepByStep software at home but who do not attend the group.
- Collect keyfiles of any patients using StepByStep on the stroke Unit.

A comparison of the total patient contact time in traditional therapy and in computer-based therapy over a three month period is shown below in Table 3.3. This demonstrates an indicative additional increase in patient hours spent on therapy activities; with a significant implicit cost saving based on notional staff salaries. It is highly recommended that a future evaluation or research design should incorporate an appropriate economic evaluation analysis, to demonstrate the relative cost effectiveness of this service innovation delivery in line with the QIPP agenda (see section 1.2).

Table 3.3: Patient contact time in traditional and computer-based sessions

Patient ID	Contact with SLT in hours and minutes *"Traditional therapy"* (March-May 2010)	Contacts in 1 hour service innovation *"Computer therapy"* (01.09.10-30.11.10)	Comments regarding attendance at computer therapy sessions
A	30 mins	6 hours	Not attended all sessions due to ill health
B	8 hours 48 mins	15 hours	Not attended all sessions due to ill health and moving house
C	7 hours	24 hours	
D	20 hours 20 mins	12 hours	Did not complete the full 3 months as had a home licence installed
E	25 hours 15 mins	25 hours	
F	17 hours 20 mins	26 hours	
G	0	22 hours	Not attended all sessions due to ill health
H	7 hours 20 mins	16 hours	Not attended all sessions due to other health appointments
I	8 hours 45 mins	26 hours	
J	N/A	26 hours	Referred to SLT at end of May
K	0	22 hours	
L	4 hours 30 mins	13 hours	Attended once a week

3.2 React2 Software

The total time spent on practice exercises by patients using the React2 software package over the same three month period are shown below in Table 3.4. This shows the combined total time of over 56 hours and the volume of exercises completed by these patients.

Table 3.4 Patient outcomes on React2 software

Patient ID	Total time on computer practice	Total number of exercises completed	Average score	Comments regarding attendance at computer therapy sessions
I	2 hours 43 mins	14	82%	Not attended all sessions due to ill health
II	17 hours 15 mins	55	88.59%	
III	14 hours 17 mins	65	97.68%	
IV	9 hours 30 mins	33	n/a	Attended once a week
V	13 hours 42 mins	80	98%	
Total all patients	56 hours 47 mins	247		

4. Patient Reported Experiences

The information sheet was sent to all patients at one of the group therapy sites, to invite them to indicate to the SLTA if they were willing to be interviewed. Four patients were willing and available. The interviews were conducted in a private room on the site. The focus of this evaluation was very explicitly on their experiences of the new service innovation: not asking them to make comparisons with their previous experiences of 'standard practice'. The following factors emerged from the thematic network analysis of the patient interview data.

Figure 4.1 Reported patient perceptions
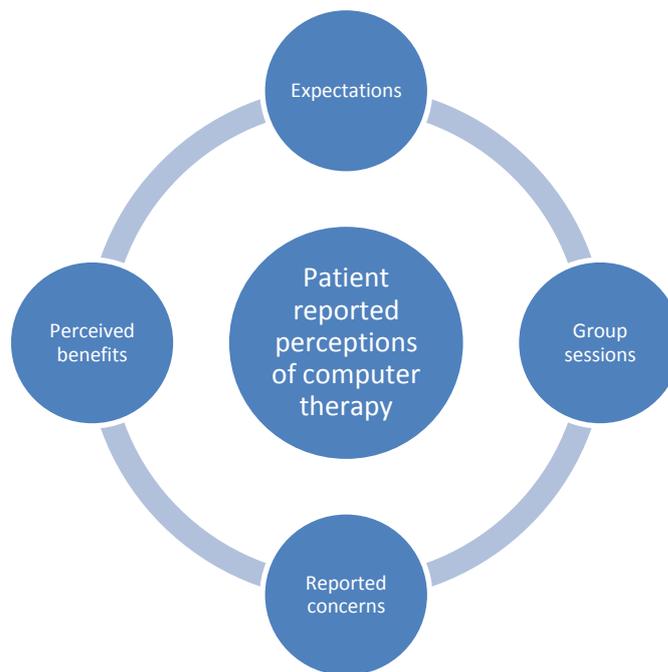
4.1 Expectations of computer-based therapy

Willingness to try

All of the patients and their carers expressed a very open and positive attitude to undertaking a new approach to therapy. It was apparent that to a certain extent they did not quite know what to expect: one patient/carer remarked on their thoughts prior to starting the sessions: *"it's a mystery"* (4.2) and *"any port in a storm"* (4.1).

There was an acknowledgment that it was unlikely to be an instant effect: *"understand it's a long process"* (1.2). However, all patients and their carers expressed that they had been prepared to make a commitment to work at the practice exercises: *"I want to improve"* (1.1)

Limited prior experience of technology

It was evident that not all patients and their families have computers at home, nor any prior experience of using IT. This generated some reasonable concerns prior to starting the session about whether there would be sufficient and appropriate access to support and training. Some patients and their carers reported that they had felt a little apprehensive at the outset, but nonetheless they had been mostly prepared to *"have a go"* (2.1).

Where the family already had a computer at home, and a relatively higher level of confidence in using IT, they had welcomed the opportunity for home practice with the 90-day licence that was available.

4.2. Perceptions of computer-based therapy practice in group setting

Location of group sessions

It was reported that having the opportunity to attend sessions at a location close to home was particularly valued. Some of the patients and their carers reported that they would have been prepared to travel to attend these sessions, but only up to a limited distance from home.

Use of headphones

Some comments were reported about the use of headphones by the patients when practising in the group sessions, to minimise distractions to other group members. In particular, the carers reported that when the patient wears the headphones, it limits the potential for them to give helpful prompts at the right moment.

4.3. Perceived benefits of computer-based therapy

Speech improvements

Patients and their carers reported that they perceived that the repeated practice in reading aloud gave them a sense of progress (1.2; 1.4) and improvement in their speech production: *"it helps (the patient) to be able to say the words"* (3.2).

Understanding of purpose of practice repetitions

Some of the patients and their carers reported that they understood the explanation they had been given about the rationale for practice repetitions. Some reported that they have seen that this has helped to elicit the production of full sentences for the first time since the stroke, through the repeated practice and modelling (3.2). This was explicitly valued: *"it's worth the effort"* (3.4).

Functional benefits / carry-over

It was evident that some of the patients and their carers had anticipated that the practice sessions might generate some accelerated progress in spontaneous speech. Some but not all of the patients and their carers reported that they felt they had seen some "carry-over" (3.2) since the start of the sessions.

4.4. Reported concerns related to computer-based therapy

Anxiety re expected progress

As mentioned above, the interview data showed that there was considerable uncertainty expressed by the patients and their carers related to their expectations about progress : *"how fast their progress is likely to be"* (4.2).

Many of the carers specifically reported that they had seen a negative impact on the patient's motivation level as a direct result of frustration at *"failure experiences"* (4.2) on the practice exercises. One patient who had considerable insight was able to express for themselves that they could recognise the potential for frustration and disappointment when they had become tired by practising for too long and had started to make more errors: *"it's good to put a limit on your practice time, know when to stop"* (2.2).

Limited eligibility to enter the project

Some of the carers particularly reported anxiety related to the perceived time-limited opportunity to participate in this service innovation. They valued the sessions and wished to continue attending but no assurances could be given regarding the opportunity for this, so they were directed to discuss this with their own SLT.

Additional carer burden

Although the patients and carers all reported valuing the sessions very highly, it was also clear that these families have a high number of other health appointments on a regular basis. This was reported as a considerable sense of pressure on their time: *"don't think we can fit much more in"* (3.4).

Additionally for some patients and their carers, it was reported that these practice sessions generated an sense of pressure on their personal relationship. This was expressed specifically as a challenge for the carers regarding their responses to the patient in practice sessions, including being *"honest about (the patient's) progress" (*2.2).

Some carers also reported that they feel particularly challenged to know how to maintain their own *"tolerance and patience"* (2.2), especially when the patient becomes frustrated and loses their motivation to continue practising. It was specifically reported that practising at home *"feels very different"* (1.3) to in the group sessions on site.

Aspects of the software package/s

One carer had expressed a specific concern that they perceived the access to the software package to be dependent on proficient literacy skills (4.2), and questioned whether there might be any alternative levels for patients – and their carers – whose literacy skills are less strong.

One other issue that was raised in several interviews was a reported disappointment that the software package had a *"limited number of images/vocabulary"* (1.4). It was reported that they would like to see an increased potential to personalise the images and vocabulary.

Preference for traditional therapy

One of the carers reported that their ideal preference would have been to have the opportunity to continue with *"traditional therapy as well as new computer therapy"* (1.3). This perception was not expressed in any of the other interviews, and the planned question prompt schedule had quite purposefully not asked participants to make a comparison or judgement between 'standard treatment' and the current service innovation.

5. Staff Reported Perceptions

The SLT staff team were given the opportunity to submit anonymous reflective feedback comments on their experiences and perceptions of this service innovation. There was a 100% response rate for the questionnaires. In addition, individual interviews were conducted with the lead SLT for this service innovation, and with the SLTA. The themes generated from these data collection sources were analysed and synthesised together and are presented below.

Figure 5.1 Staff perceptions of service innovation

The following narrative text reports both the positive and negative perceptions around each of these items. Direct quotations are used to illustrate that these themes have been directly derived from the evaluation data.

5.1 Patients' access to service

Access to SLT

The SLT team were in consensus that this service innovation had significantly *"widened therapy opportunities for patients"* (3.2). Specifically, they reported that greater numbers of patients had been able to receive intensive therapy practice over this period than would have been deliverable through a traditional therapy model. It was noted that patients could also access therapy sooner, more frequently, and at more flexible times than would otherwise have been possible (4.2, 5.2).

IT resources

A concern was reported that some patients were disadvantaged from the potential for even more practice if they did not have access to a computer in their own home. The SLTs also commented that not all of their patients had the pre-requisite skills or confidence to participate in these computer-based sessions. There was also a perception that not all the SLTs felt that they were able to *"use the software to its full potential"* (6.3).

It was reported that the IT support service had been *"marvellous"* (6.7). However, the therapists also reported that problems encountered with the laptops had been *"extremely stressful"* (5.4), especially during the group sessions when patients were waiting to work.

5.2 Patients' experience

Impact on motivation

Therapists reported that they had observed that many patients *"really enjoyed the tasks, even those who have had no prior experience* (of using computers)" (2.3). In particular it was reported that *"the therapy is self-driven by the patient and is very motivating"* (3.3).

Peer support

Therapists perceived that most patients enjoyed the group setting (2.2). Additionally, they felt that the patients had a positive benefit from *"meeting people with similar problems to themselves"* (3.2). It was reported that the patients continued to want to attend the group sessions, even when they had the software for home practice (6.7).

5.3 Software features

Language level and activities

The SLTs reported that they had some suggestions for additional language levels and activities. There were also some very specific proposals for alternative cues and prompts for some of the tasks: *"it would be better if the semantic cues were given without the name of the object being given straight away afterwards"* (3.4).

Visual presentation

The therapists made a number of comments about the range and quality of the visual images in the software: *"the pictures are ambiguous and unclear"* (2.3). It was suggested by some SLTs that they would like the opportunity to design a vocabulary set and images, or be able to easily update the programme with new customised items (4.4).

5.4 Service delivery issues

Admin support

Some SLTs reported particular concerns over administrative aspects. This included issues that had been specific to the original set up of the project and group sessions, but also included ongoing issues such as booking transport for patients (2.4).

Skill mix, roles and responsibilities

There was a strong team ethos expressed by all members of the SLT team, who were confident in their own skills and strengths, and in those of their colleagues. There were however, some concerns expressed about how frequently the patients' progress could be monitored, and how responsive this model of service delivery could be to individual patients (6.3). It was acknowledged that the SLTA should have weekly opportunities to review the group sessions with a designated SLT, and to request advice on individual patient's progress as needed. The observations of the patients' experiences that the SLTA was able to report back were seen to contribute an important component of the innovation: hence it was perceived that the skills and experience of the SLTA were key to this initiative (6.5).

Practice change

The comments reported by the SLTs relating to the implementation of a new way of working were more mixed than for any of the other issues. It was evident that there were some frustrations directly related to admin and other operational issues, as discussed above. In addition, some SLTs reported that there were specific constraints to the uptake of this practice change. Whilst some therapists were recognised as being *"pro-active and motivated"* (1.3), others found the innovation *"too demanding"* (2.4) and *"difficult to adapt"* (4.3). The reported justification for the less positive perceptions that were expressed all referred to *"time pressures"* (2.4; 4.4) to understand and implement a new way of working within a *"small team with many demands"* (2.5). It was recognised that the success of a practice change of this nature will always depend upon *"motivational leadership"* (3.5).

6. Recommendations for future service provision
6.1 Recommendations for roll-out of current service innovation

6.1.1 Selection of patients

It appears that most patients are very open to trying the computer-based therapy, even if they have limited prior experience of IT. However, it should be anticipated that some patients and their carers may require considerable support to become confident in using the software packages.

Additionally, it appears that patients need to better understand the rationale for repeated practice. Some individuals expressed frustration, which may indicate that they had insufficiently understood the way this service innovation had been introduced to them.

There is possibly a need for consideration of provision of sufficient and appropriate training and support for carers; not only in operational skills for the software packages, but also in strategic skills for optimising the practice experience. For example, increasing their confidence in judging when to cease practice sessions, and how to best respond when their spouse shows any signs of frustration.

6.1.2 Timing of therapy intervention

The rationale for this software package is for early intervention. Some patients included in this cohort were relatively early post-stroke (7 months), although the service was also offered to others who were more than 2 years post-stroke at the time of starting the computer sessions. It is recommended that the SLT team should actively monitor – and be ready to respond to - the findings of current and future studies which may be able to indicate more accurately the specific sub-groups of patients and optimal timing of this type of practice.

6.1.3 Location of therapy delivery

It is apparent that patients need to be offered opportunities to attend sessions in convenient venues, close to their home. Additional home access is optimal for those who are confident and interested to use the software at home.

There is also a need for a choice of venues as well as a choice of the time of sessions; in view of the reported constraints of frequent and multiple clinic appointments for many of these patients.

6.1.4 Carer support

There is a clear need for training and support for carers. It is also a possibility that the patient's spouse is not always the optimum individual to take full responsibility for supervising the practice sessions.

6.1.5 Optimising skill-mix in the SLT team

It is crucial for services to undertake service evaluations or to collaborate in research projects that will contribute to the professional evidence base for effectiveness of designated roles and responsibilities in the SLT team. There also needs to be a commitment to framing plans for future service innovations within the QIPP agenda, to demonstrate how the value for money as well as clinical impact of SLT teams can be maximized.

6.1.6 Training for SLTs

It appears that not all the SLTs were fully aware of all the features of the software package. In particular, there may be more facility for customising the activities by adding supplementary vocabulary and images. It is essential that all members of the therapy team are aware of these aspects, even if there is designated IT support for updating the software at the direction of the therapists.

6.2 Proposed features of ideal service delivery

The themes reported here were generated by the full SLT team in the structured Nominal Group session. This approach is well-documented for being a highly effective way to generate a comprehensive list of relevant factors from a range of perspectives.

Figure 6.2 Staff proposals for ideal service innovation

Items in bold indicate new themes & items (non-bold indicates overlap with Table 5.1)
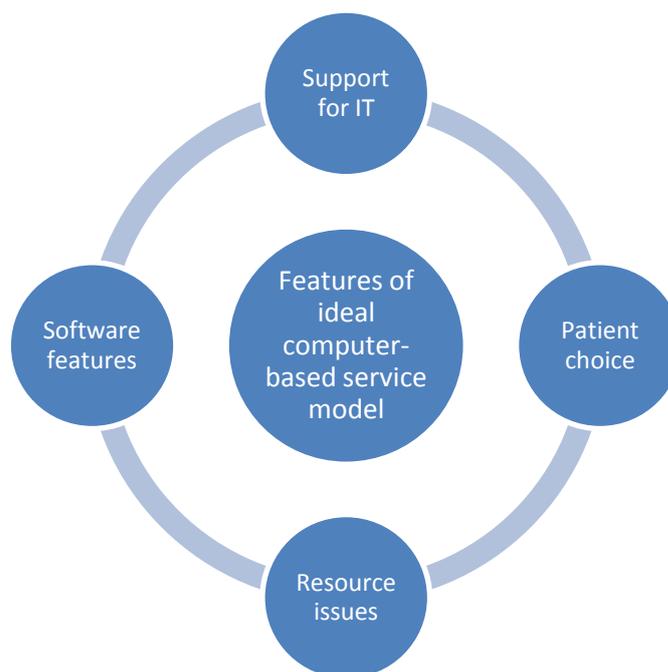
The following items were specified by members of the SLT team through the Nominal Group session, which utilised a structured approach to item generation and the development of agreed categories.

6.2.1 Support for IT

- *Support for staff by* Technicians with SLT-specific insights and experience
- ***Training and support for patients and carers***
- ***Good access to specialist IT support***

6.2.2 Patient choice

- *Venue/location – a w*ide choice of locations in venues close to patients' homes
- *Frequency/timing - c*hoice of frequency and venues to suit patients' preferences
- *Access to traditional therapy - o*pportunity for concurrent traditional direct therapy, not an alternative only

6.2.3 Software features

- *Language level and activities* for a wide range of speech and language therapy applications
- *Flexibility to adapt programmes*
- *Personalised packages* easily tailored to individual patient needs
- *Visual presentation -* Clear unambiguous visual images
- *Warm-up practice activities* and familiarisation/training activities (eg mouse control)
- *Routine data collection*
- *Automatic update summaries* of the patient's progress to be generated and sent to SLTs, plus alerts for pre-determined thresholds of progress – or lack of progress
- *Assessment and reporting options -* Integral assessment tool function plus analysis of results
- *Additional functionality* as a Voice-Output Communication Aid (VOCA)
- *Easy recording of digitised speech samples* to match the patient's individual choice
- *Research evidence base* – published studies to support selective use of the software

6.2.4 Funding and resource issues

- *Hardware resources -* Unlimited access for patients to have home-use of laptops, possibly from SLT loan bank
- *Software resources -* Unlimited access to software licence
- *Dedicated admin support*
- *Skill mix, roles and responsibilities* – evidence-based guidelines for defined roles
- *Specified care pathways* – Evidence-based guidelines for patient care
- *Hardware and software-* Design features for lightweight, portable dedicated devices
- *Carer support -* Provision of support group for carers
- *Carer training - o*ption for training carers on software use prior to patients starting on the programme
- *Patient support - e*quitable support provision for patients who do not have their own carer to accompany/support them

6.3 Summary – 'Top Tips' from the SLT clinical lead

The following comments are included as verbatim quotations from the SLT clinical lead, as advice to other service leads contemplating a similar initiative. These comments reinforce themes that have already been identified, particularly relating to themes from organisational change theory about the factors that promote successful implementation of practice change (Rogers, 1995).

- Get your team on board
- Review what you're doing to make space for new initiatives
- Collecting data is powerful to keep services moving forward
- Collecting data is also a powerful motivator for reflection on personal practice
- Take time to familiarise yourself with the software , you need to know the material inside-out
- Don't put yourself down regarding the IT – you can use it
- Keep chipping away at the new technologies
- Stay in dialogue with each other: stop doing your own thing, we need to standardise to raise our game
- Take time to seek out money, no-one else will do that for you
- Keep questioning – are you doing the best that you could do?
- Use other stakeholders – get out of your castle
- Don't try to change too much at once
- It is important to keep up-to-date with national policies which impact on service delivery. For example, Transforming Community Services document gave the project leader confidence in her ability as a clinical leader to bid for new resources; to work with partners; and to use 21st century technology.
- Patients appreciate and want new forms of therapy; technology is not a barrier when it is supported.
- Importance of targeting staff skills more precisely e.g. SLTs write the therapy 'prescriptions' using the software and load these onto the laptops; the band 3 SLT Assistant or a trained volunteer from the Stroke Association can 'dispense' the therapy.

6.4 Additional SLT roles with post-stroke dysphasia

Carer communication training

The outcomes of this service evaluation have highlighted the importance of appropriate training and support for carers. It is evident that this needs to extend beyond training in operational skills for the use of the software programmes. It appears that optimal length of practice sessions for each patient will be very variable. So carer training needs to incorporate strategic skills in supporting the patients' practice sessions by responding as sensitively as possible to indications of frustration and fatigue.

This SLT service already addresses the issue of carer training through a range of formal and informal approaches. However, it is recommended that the content and conduct of the carer support be actively reviewed, in consultation with carer representatives, to ensure relevance and effectiveness of these approaches (Cunningham & Ward, 2003; Hoen et al, 1997; Kagan et al, 2003).

7. Recommendations for future research design

7.1 Recommended research design and conduct

Service interventions of this nature are highly complex and it is essential to acknowledge the inherent challenges of designing and measuring "complex interventions for health" (MRC, 2000). Nonetheless, it is recommended that there is an urgent need for well-designed and well-conducted experimental studies, that integrate clinical outcome measures with qualitative enquiry approaches to elicit patient experience of this type of service delivery.

In particular, incorporating the use of validated Patient Reported Outcome Measures (PROMs), for example the COAST and Carer COAST (Long et al 2008; Long et al, 2009) may be highly relevant and appropriate.

Potential options could include

- Experimental design - Case Study series for intervention effectiveness with primary outcome measures clinical language measures
- Mixed methodology design

The importance of measures across the ICF domains should be recognised: most especially the impact of interventions on the patients' functional benefits, specifically in activity limitation, participation and well-being.

7.2 Review of the service evaluation approach

The design of this evaluation was planned in collaboration with the SLT lead for this service innovation, but it was essential that the data generation and analysis of patient and therapist perspectives was conducted by an independent researcher. The following section provides a brief overview of the potential strengths and limitations of alternative evaluation approaches.

Alternative options for consideration

The most traditional options for eliciting the views of staff are survey questionnaires, individual interviews, group interviews or Focus Groups (Stewart & Shamdasani, 2004). Survey design needs to either follow on from exploratory interviews, which are used to determine the relevant issues for the target audience, or to have a theoretical underpinning. In the latter case, it is usual to then follow the survey with a number of in-depth interviews to facilitate interpretation of the quantitative data (Oppenheim, 1992). There are a number of disadvantages to the use and interpretation of survey data, the first being that response rates are generally extremely low, compromising meaningful

interpretation of the findings. The other significant threat to validity is the social desirability bias, which can particularly arise where respondents are concerned that they may potentially be identified.

Individual interviews can be very valuable in understanding social constructions of situations, events and processes. There are a wide range of established approaches to generating interview data as well as analysing it and it is important that researchers are experienced in conducting interviews. It is also important that the interviewer is perceived to be independent and neutral, to minimise the threat of social desirability bias referred to above. Finally, there is the pragmatic challenge of sampling. Qualitative approaches do not aim to include significantly large numbers of participants, as the value of the findings relies on the quality of the in-depth analysis of the dialogue. However, it is essential that the sampling is purposeful and encompasses all the potential variables that are anticipated to be relevant to the issues being evaluated. Such variables may include the range of workplace settings, professional backgrounds, prior experience of the initiative, plus personal attributes relevant to professional practice.

Group interviews are often used to access the views of wider numbers of participants, again contrasting some of the predicted variables as mentioned above. Focus groups have a distinctive protocol and are generally used to prompt a debate on controversial topics. These interviews can be difficult to conduct, particularly to ensure that all group members are encouraged to participate. Very often it is reported that dominant individuals have potentially influenced other members of the group. Group interviews often lack a clear structure and focus, which was the predominant rationale for the selection of distinctive activities to be conducted for the current evaluation.

Whatever approaches may be undertaken in future evaluations, it is strongly recommended that these should include elements of group activity. The benefits to staff of articulating their perceptions and opinions, plus having the opportunity to listen to each other cannot be underestimated, either as a learning opportunity or as a research strategy.

The Nominal Group Technique (NGT) is a long-established and widely used technique to

produce a large number of ideas in relatively short time periods (VandeVen & Delbecq, 1974; Bartunek & Murnighan, 1984). More recently it has been implemented with groups of Allied Health Professionals (Potter et al, 2004: Selfe & Greenhalgh, in press). The exercise is conducted in two stages. Stage one requires participants to fill out blank post cards with key facts in bullet point form. During this stage participants work independently and are not allowed to communicate with each other. In stage two, participants take it in turns to deliver a single bullet point to the facilitator who records these onto a flip chart. Questions are allowed for clarification but not open discussion. Commonly items are repeated and the number of repetitions is recorded to illustrate the level of agreement. Ideally, participants should be drawn from the widest range of professional backgrounds, staff bandings & work settings, with a recommended group size of 6 -10 individuals (Taylor-Powell, 2002).

One major advantage of NGT is that it avoids two common problems caused by group interviews and Focus Groups. Firstly, some participants can be reluctant to suggest ideas because they are concerned about being criticized. Secondly, some members are reluctant to create conflict within a group. NGT has the clear advantage of minimizing differences and ensuring relatively equal participation. Other advantages include producing a large number of ideas and providing a sense of closure that is often not found in less-structured group methods. At the same time, one major disadvantage of NGT is that the method lacks flexibility by only being able to deal with one problem at a time. Also, there must be a certain amount of compliance with the conduct of the exercise and all the participants need to feel comfortable with the degree of structure involved.

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9. Appendices

Appendix 1: Information sheet for SLT staff

Appendix 2: Information sheet for patients and carers

Appendix 3: Questionnaire for SLT staff

APPENDIX 1: INFORMATION LEAFLET FOR SLT SERVICE STAFF

"Providing enhanced speech and language therapy using computer technology"

We would like to invite you to take part in our study. Before you agree to participate we will explain the rationale for this evaluation and other relevant information.

Who is conducting this evaluation?

The evaluation will be carried out by Dr Hazel Roddam (Principal Lecturer in Research at the University of Central Lancashire) who has considerable experience of working across a range of service settings.

Why is the evaluation being carried out?

This evaluation will form the basis of a report on the outcomes of this service innovation which won the Enabling Change Award offered by NHS NW Innovate Now. This evaluation will comprise an in-depth consultation with members of the local SLT team as well as service users.

What is involved in this evaluation?

All members of the SLT team will be invited to complete and return an anonymous questionnaire relating to this initiative. Business reply envelopes will be provided for each staff member to return their responses in confidence to the Lead Researcher at UCLan.

In addition, all members of the SLT team will be invited to participate in a structured group activity, to generate a list of good practice indicators for this model of service delivery. The group session will be conducted using the Nominal Group Technique (NGT). This is a structured group interview approach which has been selected as being the most effective and equitable approach to generate a broad range of perspectives and from all participants, with an optimum group size of between 6-10 participants. The outcomes from this group session will be collated as flip chart notes to be retained by the Lead Researcher: no audio-recording of the session will be made.

The Lead Researcher will also conduct individual interviews with the SLT manager of this initiative, the SLT Assistant responsible for delivery of the initiative, and a number of the service users and their carers. The interview sessions will be audio-recorded for the purpose of checking notes made in the sessions: the audio-recordings will not be transcribed in full. The interview participants may request to see a copy of the researcher's notes if they wish to do so.

The findings of these exploratory consultations will be presented in the context of data relating to the conduct and anonymised clinical outcomes of this initiative, which will be supplied by the SLT service manager.

Why have you been invited to take part?

You are invited to take part as a member of the local SLT service and we very much value your views.

It is your decision to take part. You are welcome to contact the lead researcher to discuss any questions you may have about the aims, conduct or reporting of this study. If you agree to take part, we will ask you to sign a copy of the consent form when you arrive for the meeting.

When and where is the evaluation taking place?

The NGT meeting will take place at Blackpool Victoria Hospital on Tues 22nd February 2011, 10.30 am – 12.00 and has been planned to be as convenient as possible for all the invited participants. This session will last no longer than one and a half hours in total.

How will the evaluation findings be reported?

The data generated from this evaluation will be submitted as a report to the sponsors of this Enabling Change Award, NHS NW Innovate Now.

Items generated by the group session will not be attributable to individuals and no personal identifiers will be included in the evaluation report.

What are the possible risks and benefits of taking part in this evaluation?

There will be no direct benefits to taking part in this study, except the opportunity for professional discussion with colleagues who are working in the same clinical field. All participants will have the opportunity to view a copy of the completed evaluation report.

We do not envisage that there will be any risks in taking part in this evaluation.

You can decide not to take part at any stage – even if you have signed the consent form. You don't have to tell us why you have changed your mind. Your decision to withdraw will not affect you in any way.

If you change your mind after the structured group session, we will continue to use the data generated at that event because it is completely anonymous and cannot be traced back to you.

What can I do if I am not happy with the evaluation?

If for any reason you are not happy with any aspect of the conduct of this evaluation please ask to speak to the Lead Researcher who will do their best to answer your questions.

Dr Hazel Roddam: e-mail HRoddam@uclan.ac.uk   Tel: 01772 895484

If you remain unhappy and wish to complain formally, you can do this through the University complaints procedure. Details can be found on the university website: www.uclan.ac.uk

APPENDIX 2: INFORMATION LEAFLET FOR PATIENTS & CARERS

"Providing enhanced speech and language therapy using computer technology"

We would like to invite you to take part in our study. Before you agree to participate we will explain the rationale for this evaluation and other relevant information.

Who is conducting this evaluation?

The evaluation will be carried out by Dr Hazel Roddam (Principal Lecturer in Research at the University of Central Lancashire) who has considerable experience of working across a range of service settings.

Why is the evaluation being carried out?

This evaluation will form the basis of a report on the outcomes of this new way of delivering Speech and Language Therapy services to people who have had a stroke.

This evaluation will comprise an in-depth consultation with members of the local SLT team as well as with patients and carers who have experienced this new service.

What is involved in this evaluation?

The Lead Researcher will collect information about the way this service has been delivered and the benefits in terms of patients' progress in language skills. This information will be provided by the SLT service manager, who will be responsible for making sure that all patient details have been concealed.

The Lead Researcher will conduct individual interviews with the SLT manager of this initiative, the SLT Assistant responsible for delivery of the initiative, and a number of the service users and their carers.

The interview sessions will be audio-recorded for the purpose of checking notes made in the sessions: but the audio-recordings will not be transcribed in full. All interview participants may request to see a copy of the researcher's notes if they wish to do so.

Why have you been invited to take part?

You are invited to take part as someone who has experienced this new model of service and we very much value your views.

It is your decision to take part. You are welcome to contact the Lead Researcher to discuss any questions you may have about the aims, conduct or reporting of this study. If you agree to take part, we will ask you to sign a copy of the consent form when you arrive for the interview.

When and where is the evaluation taking place?

The interviews will take place at Rossall Hospital on **Tues 8th February 2011, between 9.30 – 10.45 am** and this has been planned to be as convenient as possible for all the invited participants, as it will take place during your usual therapy session. Each interview session will last no more than 20 minutes.

How will the evaluation findings be reported?

The data generated from this evaluation will be submitted as a report to the sponsors of this Enabling Change Award, NHS NW Innovate Now.

No personal identifiers or any other personal information will be included in the evaluation report.

What are the possible risks and benefits of taking part in this evaluation?

We do not envisage that there will be any risks in taking part in this evaluation.

You can decide not to take part at any stage – even if you have signed the consent form. You don't have to tell us why you have changed your mind. Your decision to withdraw will not affect you in any way.

All participants will have the opportunity to view a copy of the completed evaluation report and to discuss this with your Speech and Language Therapist.

What can I do if I am not happy with the evaluation?

If for any reason you are not happy with any aspect of the conduct of this evaluation please ask to speak to the Lead Researcher who will do their best to answer your questions.

Dr Hazel Roddam: e-mail HRoddam@uclan.ac.uk   Tel: 01772 895484

If you remain unhappy and wish to complain formally, you can do this through the University complaints procedure. Details can be found on the university website: www.uclan.ac.uk

APPENDIX 3: QUESTIONNAIRE FOR SLT SERVICE STAFF

"Providing enhanced speech and language therapy using computer technology"

All members of the SLT Team are invited to submit anonymous responses to the following items, using the pre-paid business reply envelopes provided.

Thank you for taking the time to contribute to this consultation – your views are very important.

Responses to this questionnaire will be used to inform the interpretation of other data gathered as part of the evaluation of this service initiative. A synthesis of comments received may be included in the final report but no statements will be identifiable.

Please continue on a separate sheet if necessary.

Qu.1 What were your expectations of this service initiative before the project started?

Qu.2 In your opinion, what are the most positive outcomes of this service initiative?

Qu.3 In your opinion, what are the least positive outcomes of this service initiative?

Qu. 4 Please comment on any practical issues you are aware of that arose during the conduct of this service initiative?

Qu.5 What recommendations would you make to other SLT Teams who are considering a similar initiative?