

SMART2 Project – update on progress 1st May -30th September 2008

Staffing update

A few changes have occurred within the project team.

Tricia Ware, research fellow at Sheffield Hallam University, left the project in September.

PhD student Yan Huang has joined the Ulster team with a remit of data analysis.

Finalising the necessary ethics and governance procedures

During the last few months we have built upon our success application for ethical approval by applying for and obtaining site specific ethical approval. This means that we can approach and recruit health service staff and patients from agreed services within Sheffield and Bath. We also have governance approval from the health trusts involved (including honorary contracts) and all staff who are involved in working with health professionals and patients have been checked by the Criminal Records Bureau.

Accessing and using the evidence

During these first few months we have been considering the necessary “ingredients” for a technology based self management system for three conditions; namely chronic pain, chronic heart failure and stroke which might, in the future, be adapted to meet the needs of people with other long term condition.

Reviews of the evidence and knowledge are well underway and will be completed by the end of this calendar year. The main purpose of this work is to produce clear recommendations to underpin the activities of the project. However, we also anticipate being able to make the results available to a wider audience through journal publications and presentations. The questions being addressed through the reviews are as follows:-

What are the best technologies?

The search for information regarding the most appropriate technologies for inclusion in the personalised self management system (being undertaken by researchers at the University of Ulster) has been extended. A separate evidence synthesis has been produced of the identified technologies for people with stroke.

The most promising technologies out of the review are being tested in the laboratory for functionality and proof of concept. To date, tests have included an adaptation of the Nintendo Wii, smart shoes, sensor technologies for limb positioning, technology for measuring vital signs and lifestyle monitoring technologies.

What is best practice in the promotion of self management for of the three conditions?

Current best practice in rehabilitation and preventive treatment strategies for people living with chronic heart failure, with chronic pain and following stroke has been

examined through the available literature and knowledge base; for example international and national/ best practice guidelines. We have focussed upon the information that the end user requires to self manage their condition.

How might behaviour change be promoted?

Researchers at the University of Bath have been using the evidence base to examine how use of technology might promote behaviour change; a key aspect of the overall project. Through project discussions, the team has agreed that an understanding of the psychology of behavioural change is essential to the success of the eventual technology and we are now considering how the key recommendations out of the available evidence might be integrated into the self management system.

Which government policies are relevant and how?

Policy and policy implementation concerned with use of technology for health and social care continues to move at a rapid pace. Researchers at the University of Sheffield produced a rapid review of readily available material in the summer. Following discussions with the project team, key aspects of this review are now being enlarged upon through a systematic search of policy documents and through examination of the supporting evidence for key policy decisions.

Recruiting and consulting with those who might use the system

A central aspect of the project involves undertaking research with people who might eventually use the technology that we develop (people with chronic pain, heart failure and stroke) and health service practitioners who will be involved in helping people to use the technology. Involving practitioners and end users helps to ensure that the technologies we develop are what people need and will want to, and be able to use. Because discussions with most of our respondents could not take place until the project obtained NHS Ethics and Governance, our user research was initially limited to focus groups with therapists recruited through their professional bodies. However, we are now able to consult with staff employed through health services and with users of services. Three focus groups with professionals have been carried out with and three more are planned. These included activities aimed at getting information about therapists current use of technologies, the kinds of therapies they use, and an envisioning activity to help them to explore how future SMART-type technology might facilitate their professional practice and the service provided to patients.

Personas are a rich description of a particular individual, their lifestyle and their clinical condition, their abilities in use of technology and their life goals. Scenarios are descriptions are rich of a person's daily activities and routines. For design meetings planned for October and November with end users, scenarios from the May workshop have been expanded upon and refined with additional secondary data (for example publicly available interview data from other research projects and published papers) to produce a series of 'envisioned scenarios' for each of the three conditions. These are

scenarios in which the persona are imagined using a version of the SMART technology in order to make explicit design assumptions and identify key design issues for further analysis. Based on workshops discussions, the scenarios will be being refined and expanded to explore alternative system concepts for SMART and to identify commonalities and differences in the needs of each of the conditions. This process will help refine the concept and philosophy document, and the home visits planned for the new year. The data will also feed into storyboards and paper prototypes describing the low level interactions between user and system.

Identifying the therapy content to include in the system

The aim of this aspect of the project, which is being taken forward is to take the best practice identified through reviews and through consultation with health professionals and organize it into a series of actions to mirror how a health professional would normally deliver the interventions. It also needs to be able to be readily translated into a format that will enable inclusion within the technology platform.

Creating the technology platform

Work is being progressed at the University of Ulster to produce a central system which integrates a base station with wireless and standards connectivity. **A self report interface for use by people with chronic pain has been developed for the base station which also includes a form of mobile device.**

Dissemination

Sharing the process of project and emergent results is a key aspect of the overall work. During the last few months the following have been undertaken:-

Towards a Decision Support Personalised Self Management System for Chronic Conditions, presented at IEEE International conference on Networking, Sensing and Control, April, 2008

Poster presented at HPSS R&D Office Trauma & Rehabilitation RRG research away day, 2008

Poster presented as "work in progress" to the Society for Research into Rehabilitation, Summer 2008

Personalisation and Configuration of assistive technologies, presented at EBMS 2008, August, 2008

Forward plans

The potential of technology for self-management of long term conditions, SPARC / CARDI “Showcasing ageing and disability research – lessons for policy and practice”, 4th Dec 2008, Croke Park, Dublin

A further poster accepted for presentation at the RAatE conference in Coventry in December

An animation of a person with stroke using the personalised self management system has been produced for presentation to the UK Age Research Forum in October, and is available on the project website. A second has now been completed and will be available in the near future.