

STRETCH Project

Socio-Technical Resilience for
Enhancing Targeted Community Healthcare
EPSRC-funded Project EP/P01013X/1



STRETCH News

May 2018

This is the newsletter for the Socio-Technical Resilience for Targeted Community Healthcare (STRETCH) project. The newsletter is sent bi-monthly to communicate with our research partners and collaborators.

Please also see our website <https://www.stretchproject.org/> which will be updated as the project progresses.

STRETCH Aims

The project will develop a patient-centred digital healthcare support infrastructure that is able to integrate and coordinate data and capabilities from both automated sensing and the human 'circles of support' ranging from medical professionals, care workers, community support and relatives. During the course of the project we will extend our understanding of how circles of support are created, coordinated and sustained.

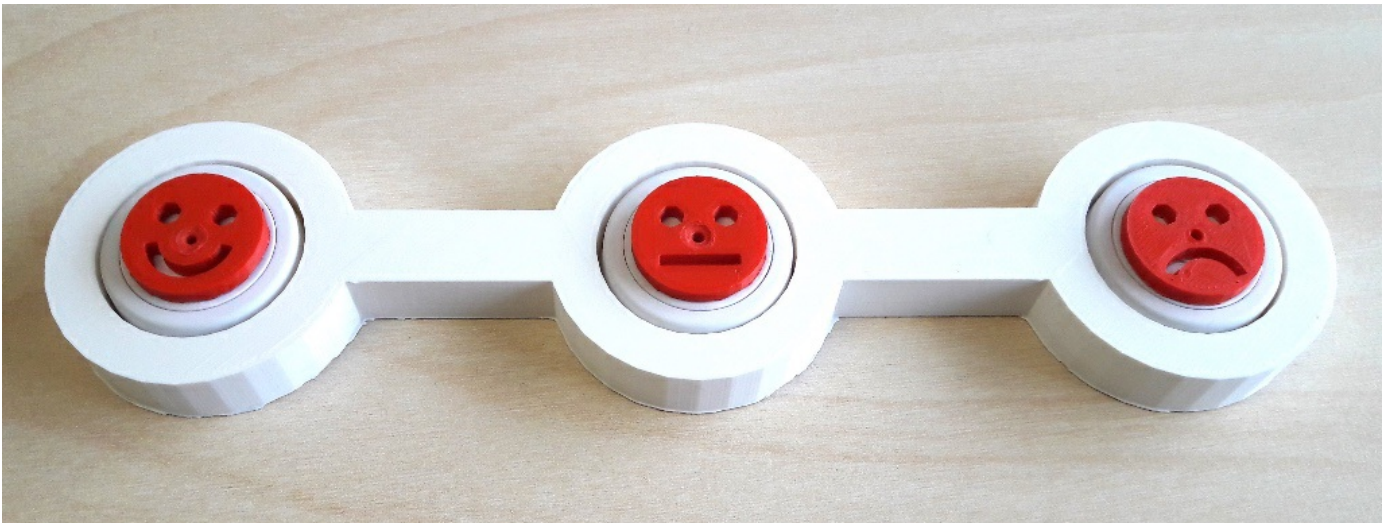
A host of new smart devices now make it feasible for people to be monitored by doctors while recovering in their homes. Devices range from wearable technology which measures indicators such as heart rate and temperature, to home sensors recording patient activities, to automated carer management systems. The project's key challenge is integrating technology with these circles of support, comprising a wide range of people with very different relationships to the patient, levels of medical expertise and technological competence, who all need to share information with one another.

Recent Activities

We had our regular project team meeting in London on the 19th of April 2018, and also undertook the following activities over the past few months.

Tangible buttons for self reporting mood at the OU

We designed and built button based tangible user interfaces (TUIs) for mood self logging. Currently our mood TUI has 3 off the shelf bluetooth buttons that correspond to happy, neutral and sad mood states. When a user presses any of the buttons, it communicates to the raspberry pie microcontroller which then logs this data on the web server. We have designed and 3D printed three geometries (horizontal line, vertical line and triangular) as holders for the buttons. These 3 TUIs are currently being pilot tested inside our building near the entrance, exit and at the coffee machine.







Age UK Exeter Circles of Support Study



In the last months we have been introducing people to some home sensor devices, wrist wearables (pedometers), mood buttons (as described above), and data sharing interfaces, to determine their acceptability and perceived usefulness, and asking them what information they would and wouldn't share with their family, support network, and healthcare professionals. We plan to write the results of these discussions up as a paper on smart home technology acceptance based on the common themes of questions that participants raised.

OU Meeting at Bonymaen House

We met Mark and Claire Warren at the Bonymaen care home in Swansea. It provides short term support (which is maximum six weeks) for older people who have spent a long time in hospital and need help transitioning back to living in their own home. The care home consists of two bed room house where older adults practice independent living before preparing to leave. It comes with fully fitted kitchen that has got gas cooker, electricity cooker, microwave, Kettle, washing machine, and dryer. There is an emergency button to call for help.

Key discussion points:

1. They think that employing technology for monitoring older people will be helpful in assessing people's ability to live independently. It can make it clear how much of a support an older person needs, which will in turn not only help to save huge cost and time, but also direct the resources into people who really need that.
2. They have assessment criterion. They evaluate people every week, until they make sure that they are able to carry their life independently. Then they make a decision in a meeting between nurses, physiotherapist, and social workers.
3. Social Isolation is a common problem, and have lots of complications such as: losing confidence, depression, and anxiety. Older adults become less independent. The care home also organises socialisation events, and activities and noticed that some people who meet in the care home tend to make friendship and stay in touch.
4. They have connections with CoS (family, friends, GPs) and also helps older people to maintain the connections and develop new ones while they are at the care home.
5. They have connections with the health service. They share information over the phone or by email with GPs. GPs also come every day. The nurse can see the results of the blood test.

Planned Activities

- Deploy Mood buttons, front door sensors and fridge sensors, in the homes of participants in Milton Keynes and Exeter.
- Continue with the circles of support study in Exeter.
- Akshika Wijesundara at the OU, plans to build and test a multimodal adaptive guidance system for smart kitchens. The system can adaptively provide ambient light, audio and video guidance, depending on the complexity of task and participant capabilities.
- Researchers at the OU also plan to deploy sensing platform inside their own homes to test the developed Machine Learning algorithms.
- Our external electronics manufacturer is in the process of completing build of sphere sensor kits and we hope to start pilot testing them in the the next couple of weeks.

STRETCH Website

STRETCH PROJECT

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stretch-project@googlegroups.com

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