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

STRETCH News

December 2017

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 15th of December 2017, and also undertook the following activities over the past few months.

Age UK Exeter Pilot Study

Now we are in the process of expanding beyond the conversations with our 5 pilot participants, by talking to a variety of family, friends, and professional supporters. Then we can build up an understanding of the different types of support roles that people play and how they could be supported by STRETCH. Over the next 3 months we will also start showing the pilot participants some of our proposed sensor and wearable technologies, to determine the acceptability and perceived usefulness of the technologies. We will stress that the technologies are not intended to replace human contact, but to help individuals and their circles of support to be more resilient – for example, to catch support tasks that have not been completed, or to encourage sharing and communication amongst different circles of support, where appropriate.

Community engagement

We are still collecting responses to a survey on informal support for older people. This survey aims to fill a gap between formal volunteering and primary carers, by understanding the motivations and experiences of people who are more peripheral in a

circles of support system – e.g. neighbours or acquaintances who provide more casual support. Please feel free to complete or circulate this survey if applicable to you or people you know: https://exetercles.eu.qualtrics.com/jfe/form/SV_6MztNE2TpEZD84B

Sphere meeting

We met the Sphere project group in the University of Bristol (16th November 2017), who have been working on smart home technologies.They arranged a one day workshop for us explaining the devices they have built and the research they have done using the devices. These devices monitor the environment (e.g. light, humidity, water usage), movement and location (e.g. through video). We also visited one of the smart homes they have built to test their sensors in order to understand how the installation happens. We are in the discussions with them to get their devices and to do test runs with our participants.

Link : http://www.irc-sphere.ac.uk/

Interviewing clinicians, and healthcare professionals

We met with social workers in Cardiff and talked about the process of discharging older adults from hospital in Cardiff and Swansea. We plan to meet with them again and work with them to better understand how the discharge process works and how we might support similar processes through STRETCH. We also talked about recruiting new participants in Wales for the STRETCH pilot studies (privacy study in Milton Keynes, and survey on motivations for informally supporting older people).

We also met with Dmitri Katz who is a PhD student researching how technology can help diabetes management. This discussion gave us more insight about the technologies used in diabetes management and how it can compliment our research.

Overall Architecture of the STRETCH System

We worked on the overall architecture of the system and went through a discussion phase to improve the initial architecture.

In the coming months we will be focussing on documenting and analysing the requirements to help identify the specific technologies for monitoring and intervening to support the care needs of individuals.

Team News

Dr. Amel Bennaceur joins the team!

Dr. Amel Bennaceur is a Lecturer in Computing at the Open University, UK. She received her PhD in Computer Science from the University of Paris VI in 2013. Her research interests include adaptive systems and software engineering. She was part of the *Connect* and *EternalS* EU projects that explored synergies between machine learning and software generation. Dr Amel would contribute by defining the software architecture to the STRETCH project as well as investigating the synergies between machine learning and software engineering methods to support STRETCH intelligent and resilient software ecosystem.

Planned Activities

- Meet with AgeUK Milton Keynes to further investigate the management of the patient discharge process.
- Iteratively improve the overall architecture of the system
- Research more on the technology that could be used in the project (wearables, sensors and batteries)
- Continue Interviewing supporters (adult children and friends) to understand the care needs.
- Meet the integrated discharge unit team in university hospital in Cardiff, and Bonymaen house care home in Swansea.
- Conduct initial discussions and requirements elicitation with GPs. We are contacting potential contributors from the GP communities in Milton Keynes and Exeter. Please contact us if you think you could help, or know a GP who can.

Wishing you the very best for the festive season and a great start to the new year!

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