

January 2014

## Welcome



UNIVERSITY OF LEEDS



Technology Strategy Board  
Policy Director



### What is the MALT study about?

The aim of the MALT (Overcoming the Barriers to Mainstreaming Assisted Living Technologies) project is to explore current barriers and facilitators to using telehealth for patients with Chronic Obstructive Pulmonary Disease and Chronic Heart Failure within community health settings. This is a big project that is looking at:

- Cost-effectiveness;
- Service and business models; and
- Staff, carer and patient acceptance.

The methods, findings and next steps for each project team are summarised in this newsletter.

### What does the research involve?

Running since 2011, this mixed-methods research has lots of components but to date has involved the completion of qualitative case studies of current service provision in four sites and interviews with over 150 patients, carers, frontline staff and managers. This work has fed into the development of:

- A survey of 275 patients to help understand acceptance of telehealth
- Action research work with frontline staff to evaluate solutions to operational barriers
- Alternative futures work to develop new business models for telehealth
- A financial model for telehealth

### Who is doing this research?

Researchers from the University of Sheffield are leading the study and working in close collaboration with the University of Leeds and the Advanced Digital Institute. The project is funded by the Technology Strategy Board.

### How can I get involved?

Although most of our research is already underway, we are keen to identify representatives from industry to work with us (and our NHS sites) in the 'Alternative Futures' workshops in February/March 2014. If you

have interest and expertise in the possible business models for telehealth, please do get in touch soon.

We are also keen to identify stakeholders from industry, NHS or Local Authority providers who are able to test the financial model this year. Please register your interest with us, and we will provide more information in due course.



### Where can I find out more about the findings from MALT so far?

- You could start by looking at a recent [website update](#) where you can download the presentation slides from our dissemination event on 30<sup>th</sup> September (Telehealth Industry meets Health Communities).
- Or, you could [download](#) our first journal publication on factors affecting frontline staff acceptance of telehealth from the Journal of Advanced Nursing.
- The underpinning analysis for the financial model for telehealth with CHF is also published and available at [BMJ Open](#).

### Where can I get more information about MALT?

Please contact Lizzie Coates, the study manager ([e.coates@sheffield.ac.uk](mailto:e.coates@sheffield.ac.uk); 0114 222 0803)

Visit our website – [www.malt.group.shef.ac.uk](http://www.malt.group.shef.ac.uk)

Or follow us on Twitter [@MALT\\_YH](https://twitter.com/MALT_YH)

### MALT Dissemination Event 2014

To register your interest in our final MALT dissemination event on 30<sup>th</sup> September 2014 in Sheffield please contact Kathryn MacKellar at [k.mackellar@sheffield.ac.uk](mailto:k.mackellar@sheffield.ac.uk).

## Aims

- Estimate the cost effectiveness of telehealth in two long-term conditions and assess how this is influenced by implementation issues, such as uptake and scale.
- Estimate the costs and savings, over time, for each stakeholder (e.g. commissioner, provider, primary and secondary care) and how this is influenced by implementation issues and alternative contracting arrangements.
- Develop a user friendly tool for stakeholders to use for planning services

## Progress to date

Literature reviews have been undertaken of the cost-effectiveness of telehealth for chronic obstructive pulmonary disease (COPD) and congestive heart failure (CHF) to identify possible model structures.

Interviews have been undertaken with a series of stakeholders across the four research sites, to identify their requirements for a cost-effectiveness model and a financial planning model. Stakeholder organizations have included Clinical Commissioning Groups, NHS Trusts, General Practitioners, local authorities and manufacturers.

Qualitative analysis of the interviews has been combined with the literature reviews to produce a combined cost-effectiveness and financial planning model. The combined model brings together patient population data on rates of hospitalization, with MALT survey data on health related quality of life for telehealth users, and local data on costs/contracting, to allow stakeholders to assess alternative implementation scenarios.

The model has been fully populated with data relating to one MALT site and a series of deployment scenarios are being developed and evaluated.



## Key Messages

The interviews highlighted many important issues:

- **The complexity of service designs for telehealth.** Describing 'who does what, with whom' is a challenge, but this is key when describing the flows of money between stakeholders.
- **Difficulties in accessing patient severity and outcome data.** We have managed to overcome this by using routine hospitalization data to describe disease severity and patient quality of life, which we can provide for individual CCGs.
- **Flexibility in the use of the model.** Whilst some model users will want a lot of functionality in the model in terms of complex scenario descriptions and detailed outputs, some will only want to alter a handful of parameters. We are therefore developing a modular approach that only shows what is required by the user.

## NEXT STEPS

The model will be populated and projections made in two MALT research sites where these projections will be compared against outturn figures, quarterly. In parallel to this detailed work, the model and manual will be provided to a small set of 'arms-length collaborators' to assess how well the model works when used by people other than the project team.

Finally, the model and manual will be tested with a wider set of stakeholders. In each of these three groups, the model will be evaluated using a combination of interviews and questionnaires.

# The design of alternative telehealth business and organizational models

University of Leeds

## The Team

Lauren Beaumont  
Duncan Ross  
Lucy Bolton  
Helen Hughes  
Chris Clegg

## Aims

- Report on existing telehealth business and organizational models
- Achieve a shared understanding of issues across stakeholder groups
- Develop alternative telehealth models that assist with the mainstreaming of telehealth.



## Progress to date

We have collected and analyzed data from four different telehealth services, mapping the business and organizational model at each site using a socio-technical approach - this takes the view that people, culture, goals, processes, technologies, infrastructure and the like are all part of an interdependent and interacting system. To achieve successful new business all aspects of the system need to be understood, designed and improved jointly.

Through a series of workshops with stakeholders' initial interview findings were presented back to each of the four sites and activities were undertaken to model improvements and change.

## Key Messages

The research has identified a number of key issues:

- **All telehealth services studied share common processes in delivery but there were differences in who carried out the work at each stage;** patient referral, equipment installation, equipment monitoring, de-installation, maintenance and storage.

For example, three of the four sites outsourced some part of their service delivery (e.g., installation and/or monitoring). In these examples outsourcing was reported to increase the potential for greater use of telehealth, but raised issues around successful working and trust between NHS clinicians and outsourced providers.

- **The nature of the technology procurement was also important to mainstreaming;** where sites purchased technology changes to the number or style of units were not possible under existing agreements and aging equipment inevitably led to increasing maintenance costs.
- **Overall, the research highlighted that current business and organizational models face major barriers to mainstreaming telehealth services in the UK.** In order to develop successful new models the implications of design decisions need to be considered systematically across the entirety of the socio-technical work system.

## NEXT STEPS

Going forward work will be undertaken with several sites to strategically model several alternative futures for telehealth. The exercise will help service designers move beyond the constraints of existing service design, explore and appraise new options and potential for telehealth business and organizational models.

# Frontline staff acceptance and adoption of telehealth

University of Sheffield

## The Team

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Bridgette Wessels  
Jo Nicholson  
Olubukola Oguntuase  
Lizzie Coates

## Aims

- Identify barriers and enablers for staff acceptance of telehealth within community health settings
- Examine how barriers to adoption are overcome in practice and explore how telehealth is integrated into care pathways and service provision
- Examine goals, benefits and drawbacks for patients, clinicians and service providers, and work with sites as they improve and evaluate telehealth

## Progress to date

Following a systematic review of staff acceptance of telehealth, in-depth case studies were conducted in four research sites to examine usage and acceptance of telehealth among community nursing and other frontline staff. 105 in-depth semi-structured interviews were collected and analyzed thematically.

Site reports and summaries were provided to participants, and multi-stakeholder workshops were held in each site to discuss and validate the findings. Participatory action research groups representing the different stakeholder groups involved in telehealth were then established in each site to plan, implement and evaluate identified changes that would lead to improved utilization of telehealth.

## Key Messages

This research has identified a number of key issues:

- **Frontline staff acceptance of telehealth is a slow and fragile process.** Despite shared enthusiasm about the potential of technology to deliver care remotely, there are mixed opinions about how and why to use telehealth, and uncertainty about the impact on nursing roles and patient care.
- **Early negative experiences can have a long-lasting impact on staff attitudes.** Clinicians need



to be confident that patients will benefit from remote monitoring and that the system in place to support telehealth can monitor patients accurately and efficiently.

- **Overcoming barriers around inappropriate technology and a poorly resourced or designed service is an important step towards increased adoption.** Problems with software interoperability are proving difficult to tackle.
- **Local frontline champions have a key role in providing on-going training and support to staff.** A dedicated role for managing telehealth can help drive forward identified improvements.
- **Clinical learning and the sharing of success are both key facilitators for adoption.** An awareness of the differing goals telehealth can help to achieve encourages staff to utilize it, although existing referral routes were felt to restrict uptake as not all patients were suitable.
- **Positive patient experiences, and increased productivity as a result of fewer nursing visits encourage staff acceptance.** But questions remain about how to predict the impact of telehealth on patient anxiety and self-management, and for how long patients should use telehealth.
- **Greater awareness of telehealth, engagement from commissioners and other clinical groups, and a shared vision for telehealth were identified as enablers for success.** Difficulties measuring the success of telehealth and the mixed evidence about effectiveness can act as an enduring barrier to securing future investment in telehealth.

## NEXT STEPS

The action research will continue in 2014, and additional work will be carried out to explore the impact of telehealth on nursing care; and to examine adoption, integration and pathways for telehealth. Findings from this workstream will be used to develop a range of tools and resources for different stakeholder groups.

## How are the different workstreams linked together in this project?

The understanding that sites have developed about how to remotely monitor patients, and the technology and service infrastructure required to facilitate this can link into the development of business and economic models. Further, the differing goals for utilizing telehealth identified from the case studies can help to ensure that meaningful inputs and outcomes are included in the economic model, and that the value propositions underpinning future business models are informed by frontline clinical opinion and expertise as well as policy directives and drivers. The financial implications of alternative business models and operational actions can be estimated using the economic model.



### LINKS WITH INDUSTRY

Huw Jones, Advanced Digital Institute

The one constant in the analysis of barriers to the adoption of assisted living technologies is that the market is changing. All the stakeholders have changed, in approach, beliefs, expectations and systems.

Those involved in the assisted living industry have changed significantly since the MALT study commenced. Some big players have shipped out, others are shipping more equipment, and others are now selling systems and applications.

The MALT study has engaged with the changing situation by having

dialogue with industry. A number of communication systems are open – we've had seminars, workshops, done presentations and poster displays, and held meetings. As well as that the Advanced Digital Institute, who lead the work with industry have levered knowledge from other sources to inform the project.

Keeping up to speed with what is happening in procurement, the development of technology, the shift in the way health policy will lead to market development, and the way personalisation and integration agendas are altering

perceptions about what assisted living technologies should be delivering are all being reflected in MALT. Messages are being taken from other TSB projects as well, such as the ALIP 3 projects on business modelling and the DALLAS (Delivering Assisted Living Lifestyles at Scale) scheme.

The remaining period of the MALT project will see further discussion with industry in meetings within the 4 sites and other opportunities extended through DALLAS and other projects.

## Emerging issues from our MALT dissemination event

We held our first major dissemination event on 30<sup>th</sup> September 2013. Here are some of the key emerging issues and questions from our discussions with industry and health service providers:

### **Financial modelling**

- Where does the financial model fit in and when do you start using it?  
For example, is this for evaluating contracts, service planning, convincing commissioners or risk sharing?
- What is the minimum population size for the model to be viable?
- What is more important? Saving money or doing more with current resources?

### **Business modelling**

- Important questions remain about the goals for telehealth and how these could be measured within new business models.
- New ways of working – social enterprises and personal budgets may open up new possibilities for the creation of local services.
- Commissioning for long term vs. short term outcomes can have an impact on the services and contracts we create.

### **The user perspective – rationales for telehealth**

There is a lack of consensus about the goals for telehealth. Several rationales are evident: (1) Reduce hospital admissions; (2) reduce costs of care; (3) improve service efficiency; (4) improve clinical practice; (5) help meet increasing demand for care; (6) improve patient quality of life or (7) improve self-management. During a group exercise, improved self-management was ranked as the most important rationale for telehealth. You can see a summary of the information [here](#).