

## **What is the goal of advanced telecare provision for older people? How we define its success will affect how we view its outcomes**

Telecare provision has been an important part of national policy around healthy ageing since 2006, when the Department of Health (DoH) published its Building Telecare in England Strategy (DoH, 2006). Local authorities have been encouraged to invest in providing telecare services for older local residents, living at home, in sheltered housing or in extra care housing schemes, who might benefit from personal alarm systems and sensors to help monitor their wellbeing.

Assessments of the effectiveness of these devices remains mixed. In 2007, the DoH set up a large-scale randomised controlled trial called the 'Whole System Demonstrator' programme, in order 'to show just what telehealth and telecare is capable of, to provide a clear evidence base to support important investment decisions and show how the technology supports people to live independently, take control and be responsible for their own health and care' (DoH 2011). This trial assessed the success of telecare in terms of 'clinical effectiveness' and 'cost effectiveness'. The goal of telecare provision was to reduce mortality rates, hospital visits, and the costs associated with these. The trial was used to support a commitment from the government, to work with the telecare industry in order to accelerate the use of telehealth and telecare (DoH 2012). The goal remained the same: 'The aim [of this campaign] is to enhance the lives of three million people over the next 5 years by accelerating the roll-out of telehealth and telecare in the NHS and social care, and in turn reduce the burden on acute hospital inpatient use and increase the cost effectiveness of care' (DoH 2012).

However, the peer-reviewed results of this trial found no evidence of improved telecare outcomes in terms of health service use, social care service use or mortality (Woolham et al 2019). No evidence was found that remote monitoring strengthened people's self-management capabilities (Coulter and Mearns 2016; Burgess and Muir 2018). Nor was telecare found to be more cost-effective when compared to 'ordinary care' (Henderson et al 2014). This has created a 'policy problem' for numerous telecare stakeholders (Woolham et al 2017) and the advantages of telecare provision announced by central government are under question. This has challenged the confidence and investment that were essential for telecare manufacturers; there is uncertainty about its relative merits over traditional care and support services. Local authorities, some of which had already invested in telecare programmes, now lack clarity about the benefits that these programmes can achieve.

But this may depend on how we define the goals of telecare. For the DoH, and for those implementing their trial, the success of telecare outcomes was defined in terms of reduced demand

for health and adult social care services. But older people using telecare can have very different goals. They can use telecare platforms to increase their levels of social contact, 'over-using' them by contacting monitoring centre operators for company. They can 'misuse' them in order to share information with carers and redefine their care relationships. Evidence in this area suggests that this 'misuse' can allow for creativity, engagement, greater wellbeing, and should perhaps be celebrated. It draws a picture of people who don't always care how they are *supposed* to use this technology, and instead do what they want with it (Mort et al 2013). Telecare is not always used in the ways for which it was designed, neither is it always used according to the goals of policymakers. Policy goals such as 'dealing with an ageing population' or 'reducing caregiver-patient visits' can be discarded in favour of the emergent, immediate and practical goals of users, carers and others directly involved in telecare provision (Pols and Willems 2011). This implies a very different definition of success, and impacts our assessments of the success of advanced telecare.

If the goals of telecare policymakers are so different from those of telecare users, what about the goals of others involved in the industry? How might the way we define the goals of telecare provision affect how we think about its outcomes? Our research suggests that there is a discrepancy in opinion about what telecare is for, between telecare designers, suppliers, manufacturers, local authority commissioners, housing association managers, and the many others professionally engaged in rolling out telecare services.

For some, it is clear that telecare is successful if it reduces the need for health, domiciliary and residential care, a primary benefit of which is reduced demand on adult social care budgets. This is a fundamental goal behind the expansion of telecare provision in numerous local authorities (LGA 2015). But some telecare providers are more motivated by the 'analogue switch off' in 2025, which will see the permanent removal of analogue phone lines by BT. All communications technologies will need to be fully digitised by this date, meaning that the telecare technology, used by many housing associations and others providing housing and care for older people, will need to be replaced. For these providers, replacing their telecare systems for more advanced, digital interfaces is imperative and their decisions around telecare provision have a hard deadline. What is more, this may have very little to do with cost efficiency. For some housing organisations, updating and improving their telecare offer is one way to raise their market profile. These organisations may be more interested in learning about what new technologies are available, whether people like them, and how this could improve their market standing, than reduce demand for traditional care.

Recent advances in telecare technology may also have shifted the goal posts. This is particularly true of machine learning and passive sensor technology in telecare design. Passive sensors are entirely automatic and require no input from a user. A range of sensors can be installed around the

home, including movement sensors, devices that monitor the use of certain rooms or household appliances, door, chair and bed occupancy sensors, medication management systems, and wearable devices. Using these sensors, it is possible to monitor things like whether the fridge is being used every day, or how often people are leaving the house, both of which can indicate declining health. What is more, machine learning can be used to monitor how these behaviours repeat over time to establish a baseline of 'normal' behaviour. This can be visualised and tracked on a digital interface. If someone's behaviour changes slightly from their everyday baseline, users, family and carers can be alerted that something might be wrong. The idea is that these devices can detect declining health before more serious problems occur. If someone starts using the bathroom more often, this could indicate the presence of a UTI, even before users are aware of it themselves. These new predictive capabilities are important for how the success of telecare is defined. Do they now define the goal of telecare provision for older people? In the final analysis, will these devices be judged a success simply in terms of their predictive functionality? This could leave less room for older people themselves to engage creatively with telecare devices and define the goals of use.

The advanced, predictive capacity of telecare is relatively new. This is an innovative field, with frequent developments in both the technology itself and in the companies supplying the market. Small start-up suppliers can emerge, their devices often untested. Generating the funding, marketing and business experience to build traction for their products can be a challenge, compounded by a general lack of investment. Their social goals aside, achieving market penetration will be a primary goal of these businesses. This means that their business models do not always work towards the policy goals of preventative, cost effective telecare services. Some suppliers use proprietary products that cannot be linked to other devices. Some only offer their products in bulk. Some design their interfaces around the preferences of users' families, which can lead to increased demands for care and support visits. These features may allow companies to build their brands and survive in a volatile industry, but they are not straightforwardly correlated with the goals of telecare policymakers, with the goals of those working in adult social care, or with the preferences of older people themselves.

Where capacity, resources and budgets are under pressure, the goals of advanced telecare provision can be very different. For some housing managers working in specialised housing for older people, advanced telecare interfaces can represent an increased burden. The monitoring of individuals' changing behaviours can be both practically and ethically impossible if there are insufficient carers available to respond to unforeseen alerts. In housing schemes facing staff reductions, housing managers may refuse to work with technology that could alert them of imminent crises they would not be able to manage. With their new predictive functionality, these devices can require that more, not fewer, carers are available on site. This creates a tension

between the goals of telecare designers, with their aspirations for its predictive functionality, and the way that these devices can actually be used in institutional settings where cost-efficiency is a primary policy goal. The preventative capacity and cost efficiency of advanced telecare provision may represent conflicting goals.

There are many different goals at play in advanced telecare provision. Which goals are pursued will have profound impacts on the experiences of older people using telecare. Where the funding, capacity and infrastructure are available, lack of a definitive goal for telecare provision could be a positive thing, allowing for open, speculative innovation. It could lead to user-centred service development, where older people themselves help to define the goals of telecare provision. But the funding, capacity and infrastructure is not always available; different actors operate under different constraints, and must pursue their own goals. In order to create accountability in determining the goals behind advanced telecare provision, it will be necessary to build clarity around what exactly advanced, predictive telecare is for. One solution could be to identify an agency or agencies responsible for coordination, in order to establish the goals of advanced telecare services and ensure consistency across the UK. The question then, is what these goals should be, and who should be responsible for this task.

### **About this research**

Funded by the Dunhill Medical Trust, this project started in October 2019. It aims to better understand how we can ensure that digital innovations in care work for older people. The Dunhill Medical Trust funds research around healthy ageing, and have published a case study of our research on their website. The findings of this research are based on interviews with individuals working in the field of telecare provision, including housing professionals, local authority professionals and suppliers and manufacturers of advanced telecare. For more information, and to download our full report, please visit our website:

[https://www.cchpr.landecon.cam.ac.uk/Research/Start-Year/2019/smart\\_technologies\\_ageing\\_population](https://www.cchpr.landecon.cam.ac.uk/Research/Start-Year/2019/smart_technologies_ageing_population).

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