

The costs of telecare: from pilots to mainstream implementation

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Introduction

Telecare is the use of information and communications technology to provide health and social care directly to the end-user - a patient or someone in need of care and support (Audit Commission, 2005; Barlow et al., 2007). Some forms of telecare involve the use of the internet or telephone to provide better information and support, for example to patients with a particular health condition. Another type of telecare focuses on monitoring an individual's vital signs or their activities of daily living through the use of sensors. This allows a response to an immediate need such as a fall or a sudden change in an individual's vital signs to be triggered or longer term evidence of a change in their condition to be gathered. In this way the risks associated with care outside formal care institutions can be better managed.

Calls for telecare have been made in numerous government and other official documents since the late 1990s and the Department of Health has made over £100m available to support new telecare services through the Preventative Technologies Grant, the Whole System Demonstrators and other initiatives. Telecare is also increasingly embedded in key health policies relating to managing long term conditions and providing people with greater choice over their care pathways, as well as in targets to reduce inappropriate hospital admissions and facilitate earlier discharge.

A recent systematic literature review found almost 9,000 papers (as at January 2006) in scientific journals reporting on outcomes of telecare trials (Barlow et al., 2007; cf. CSIP 2006; Paré et al., 2007; Bensink et al., 2006). These show that while there is some evidence for the benefits of telecare on care outcomes and quality of life, the amount of robust cost-benefit evidence is limited. This is partly due to the small size of most trials, and their characteristics as pilot projects (where additional resources are often made available to ensure their success). Another factor is the complexity of telecare. As both a technology and service innovation telecare can impact across many different parts of the health and social care system, as well as initiating whole system change.

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Numerous pilot projects have been conducted across the UK. These are useful in providing an indication of where the costs of a telecare service lie, but care has to be taken in extrapolating this to the costs of a mainstream service. This is because pilot projects have been targeted at a range of different populations, from generally frail, elderly people to people with specific conditions such as chronic obstructive pulmonary disease (COPD). There has therefore been considerable variety in implementation routes, making direct comparison difficult.

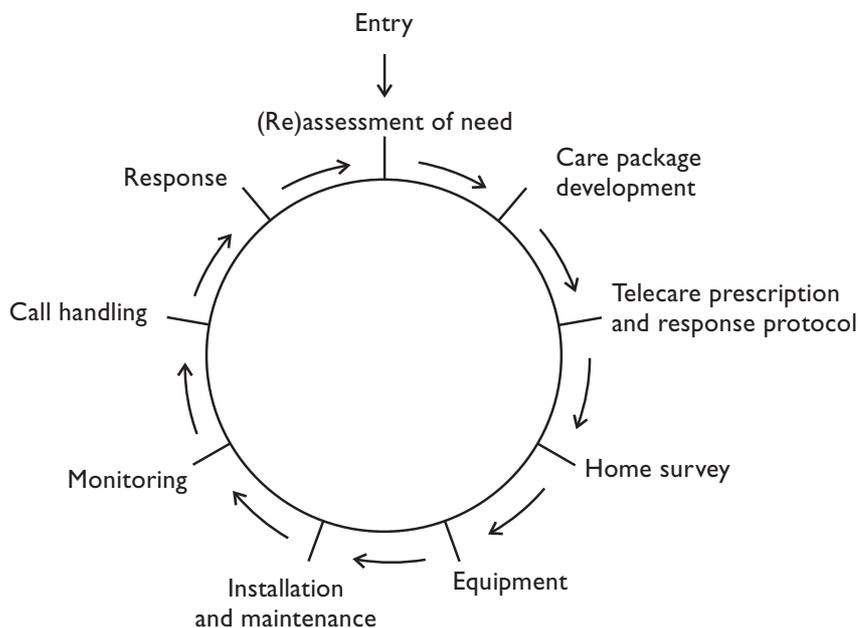
The moves to mainstream telecare make it increasingly important to understand its economic impact. This paper discusses the costs which will need to be identified and addressed by those implementing telecare schemes and those wishing to evaluate their costs and benefits.

The complexity of telecare services

Telecare is underpinned by a technical and organisational infrastructure. The former includes the telecommunications network and a data collection, storage, and retrieval system at the call centre. Data from telecare sensors are collected at the call centre, stored, and presented to the call handler by the data storage system. The organisational infrastructure comprises the call centre, call handlers, call centre protocols, the supply and maintenance of the equipment and the existing care service providers.

Telecare should be seen as a complex multi-faceted service which does not stand alone and needs to be integrated within health, social care and housing services (Barlow et al., 2003). Providing a telecare service involves a series of steps, from client referral and assessment, equipment installation, monitoring and response in the event of changes in care needs, to review and reassessment of client needs (figure 1). Each step represents a discrete activity, where information is passed between different organisations and companies, and cost is incurred. Coordinating these stakeholders and finding an appropriate model for recovering and sharing the costs makes the mainstream implementation of telecare far more challenging than setting up a pilot project.

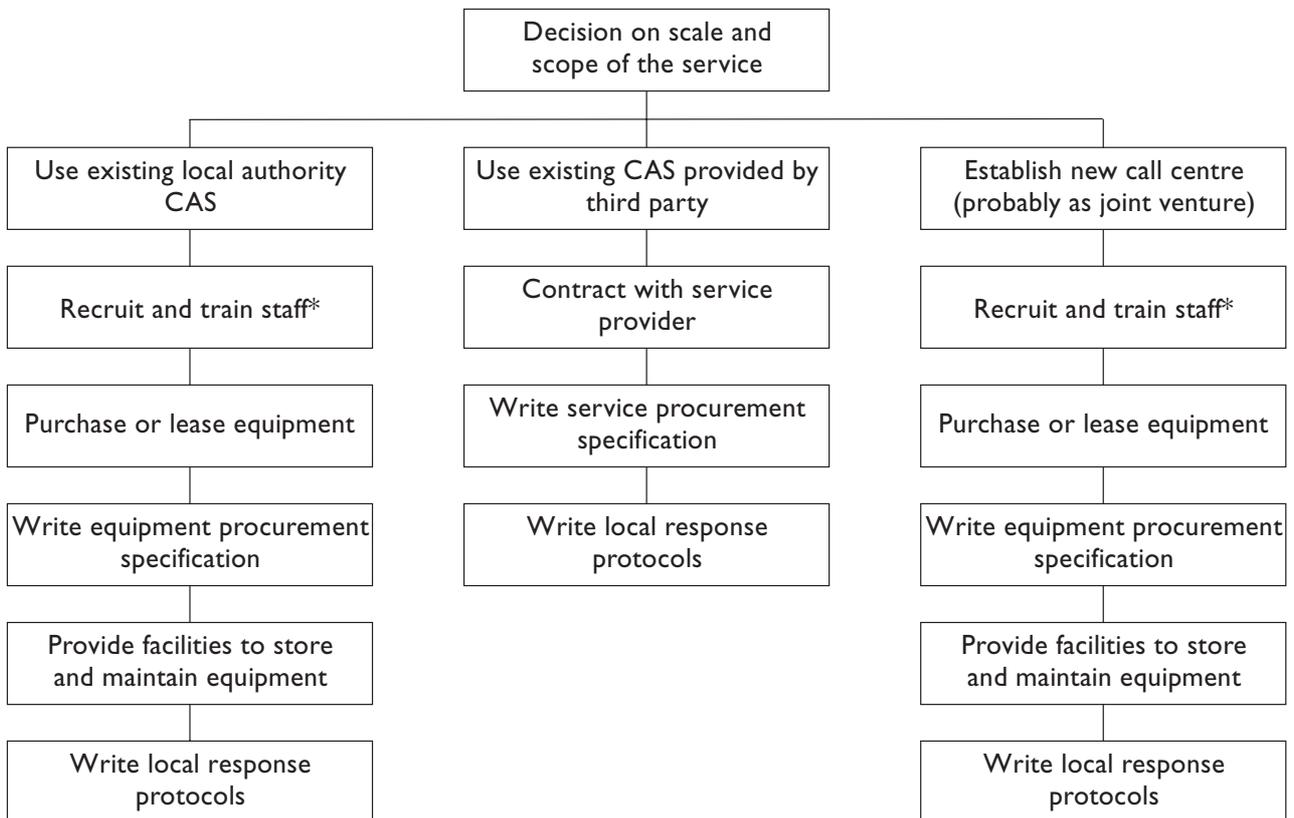
Figure 1. A telecare service model



The cost of establishing and operating a telecare service depends on the number and type of people to be supported as well as on the type of service supplied. It also depends on whether an existing infrastructure (e.g. a community alarm system) provides a basis for the telecare service. A further factor is the procurement model (buying or leasing equipment vs. the procurement of a service from a third party).

These choices are shown in figure 2, with some of the steps that follow from them. Options for local authorities may be limited, and previous decisions may have to be revisited in the light of subsequent cost consequences. Decisions at this early stage will impact on capital expenditure, cash flow and total costs. Building a new service from scratch without basing it on an existing community alarm system will be more expensive but may have advantages in regards to the scalability of the solution if further expansion of the service in the future is desired. The choice between in-house and third party solutions for the call centre will not only impact capital and running costs, but also the degree of control and the necessary administrative overhead remaining with the local authority.

Figure 2. Options in setting up and operating a telecare service



* Staff can include call handlers or operators, home surveyors, equipment installers, and equipment maintenance staff. In a small-scale service some of these roles could be combined.

Telecare equipment and monitoring costs

Existing telecare schemes provide an indication of equipment and monitoring costs for typical installations, but the data should be treated with caution; costs are frequently not recorded, suppliers sometimes subsidise training and installation costs, and service, technology and client group specifications vary. The experimental nature of pilot or trial schemes also makes the generalisability of costing difficult. Broadly, existing schemes suggest that health monitoring is likely to cost more than a basic home safety and security package. While telecare equipment for a basic home safety and security package costs £350-450, the basic cost for home health monitoring equipment is between £700-900. In addition to initial outlay, monitoring costs in the region of £5-10 per week will be incurred. A combined health monitoring and safety and security system may be considerably cheaper than two separate packages, as both technical components and monitoring activity can be shared, although this depends on what equipment is already being provided.

While firm data on telecare installation and operational costs might be limited, an important lesson from pilots and trials is that indirect costs can be substantial. Indirect costs include training existing care staff on how to develop a care package that includes the appropriate use of telecare. Training resources are critical to the speed of uptake of telecare and the success of the implementation. Raising public awareness of telecare is also important for successful telecare implementation. Creating a local demonstration facility may be one way of providing a setting for training and raising awareness. At present many of these costs are absorbed into existing budgets or subsidised by equipment suppliers, but as telecare expands in scale and scope they need to be factored into the service budget.

There is no standard local authority charging policy for telecare. According to the Care Services Improvement Partnership, published charges vary from nil to £9 per week (CSIP, 2007). Many local authorities implementing schemes funded by the Preventative Technologies Grant decided not to charge whilst focusing on increasing numbers of users and sorting out technical and service problems. In the longer term, one way of ensuring that telecare becomes sustainable is to make it self-financing, and charging users for the service might be an option - most people subscribing to a community alarm system currently pay a weekly or monthly charge. One important consideration, however, is whether telecare is classed as a medical intervention, with an expectation by the public that it would therefore usually be free at the point of need, or a social care intervention which would usually be means tested.

Trials and mainstream implementation

The conceptual and practical leap from pilot to mainstream telecare service is considerable. When assessing the costs and benefits of telecare, care should be taken when comparing services aimed at different client groups. Pilot projects are usually time limited and involve extra effort and motivation to ensure their success. Moreover, they can be subject to initial teething problems and may disrupt existing work routines.

Static cost-benefit studies based on trials, in which the effect of implemented changes is compared with the current system of service delivery, can be helpful in exposing potential impacts of telecare. However, this approach does not capture the dynamic effects of telecare implementation on the wider care system. These more subtle impacts, on clinical outcomes and care processes and costs, may only materialise in the longer term. Simulation modelling by Bayer et al. (2007) demonstrates how delays involved in transforming the health and

social care system with telecare may mean that its effects on reducing the demand for institutional care by elderly people may not be apparent in the short term.

Conclusions

As telecare gathers momentum clear details of its costs will be needed to convince policy makers and service commissioners that it is an investment worth making. At present only approximate estimates are available. The options for implementing telecare are diverse and dependent on local circumstances. Existing knowledge drawing on lessons from pilot projects and trials provides a foundation on which to develop a better understanding of telecare costs. The new schemes triggered by the Preventative Technologies Grant and the Whole System Demonstrators in England, and their equivalents in Wales and Scotland, will help build on this foundation with further data. And the development of simulation modelling work will also provide a clearer understanding of more complex impacts of telecare implementation on the whole care system over time.

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