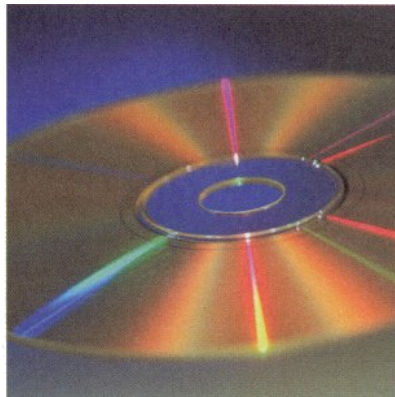**chss**
UNIVERSITY OF KENT

Centre for Health Services Studies

Piloting Telecare in Kent County Council: The Key Lessons
Final Report - 2006

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Centre for Health Services Studies

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Prof Andy Alaszewski and Rose Cappello.

Introduction

Interest in Telecare is driven by a number of factors including concerns about how public services are going to meet the needs and expectations of an ageing population and how health and social care resources can be used most effectively to enhance independent living in the community. There is also an awareness that the quality of services needs to be improved so that older people have a choice about where and how they live. In particular older people should have the right to live independently in their own homes. The government accepts that technology can play an important part in achieving this key policy objective and in the 2005-2008 Spending Review the Treasury introduced a new Preventative Technology Grant of £80 million over two years.

Policy-makers, service managers and providers and commercial companies are committed to developing and using technology to help vulnerable adults live safely and securely within their own homes. Pilot projects have demonstrated that Telecare has a key role to play in delivering effective, client centred services, and for sustaining independence and promoting healthy ageing in a safer, home environment. Within Kent Social Services the key product champions were Councillors and Senior Managers. They were convinced by evidence from other services that Telecare would make a major contribution to key service objectives and targets, especially by enabling and supporting vulnerable adults to live independently in their own homes. Three sites were used to pilot Telecare before it is adopted as a mainstream service across the whole of the Social Services Directorate in Kent.

This report describes a project funded by KCC. The Centre for Health Services Studies at the University of Kent monitored and reviewed the development of three pilot Telecare projects in Kent on behalf of Kent Social Services. Specifically the project aimed to:

- Examine how the service developed and the factors which shaped its development;

- Analyse the nature, application and impact of the technology on users, carers and providers especially in terms of the experiences of service users and the outcomes of specific interventions;

- Identify the type of infrastructure that was needed to support Telecare and make recommendations for the development of a full service from the pilot.

Method

The project used a case study design triangulating data from a variety of sources. A qualitative approach using an interview design was adopted, there were interviews with stakeholders setting up the pilots, users, carers and frontline staff, with data from the monitoring centres to build up a picture of the ways in which the pilots were implemented and their strengths and weaknesses. There were 100 user interviews, 24 carer interviews, 3 stakeholder interviews and 16 frontline staff interviews. Respondents for the staff interviews were from KCC Social Services, Monitoring Centres and community response teams.

Key Findings

➢ The implementation of Telecare required:-
* the development of mechanisms to recruit service users into the service, i.e. suitably qualified and experienced staff who could assess user need, reach agreement with users, fit the equipment and provide suitable training in its use;
* identification of and negotiation with monitoring centres that had the appropriate facilities to receive and take actions on calls and maintain necessary records;
* development of an appropriate response mechanism by agreements with named contacts, informal carers or with an appropriate service.

➢ There were major practical problems in implementing Telecare in the Pilot sites. Some of these related to specific local circumstances, other problems were shared.

➢ The development of the pilot scheme in each district reflected the local context in terms of membership of the local planning group, method of recruitment,

monitoring centre used and response mode and in particular they varied in the extent to which they had to develop special arrangements or could rely more on routine services. In some cases satisfactory agreements could not be reached with a potential partner and alternative arrangements had to be made.

➢ In all of the pilots there were initial problems with referrals. This related to lack of engagement from mainstream services. The Telecare projects were heavily dependent on care managers for appropriate referrals, however some care managers were not actively engaged. It appeared that these care managers did not understand Telecare, were not confident in their ability to promote it or were concerned that it would add to their workload. Care managers felt they had little opportunity to find out about Telecare before it started, due to the pressures from within KCC to get the pilots up and running. While there were training sessions these did not occur until the project had started

➢ It is difficult to get a clear picture from the monitoring centre data on exactly how the service is being used. The data indicated that over time the volume of calls had risen and that there was evidence of learning taking place, especially in the West Kent monitoring centre, as the proportion of false alarms and testing calls fell over time. False alarms and test calls create 'noise' in the system which may make it more difficult to identify the calls requiring reassurance and/or action. Moreover there were inconsistencies between centres. These inconsistencies indicate that the monitoring centres were using different criteria and approaches to recording the nature of calls and the action they had taken.

➢ Frontline staff clearly showed that they recognised the importance and value of Telecare. They saw Telecare within the overall context of Kent Social Services as a way in which the Directorate could achieve its strategic objective of enhancing independent living in a cost effective manner. Frontline staff recognised that the key decisions and main support for the implementation of Telecare came from the Councillors and senior managers but we could find little evidence that this coloured their perceptions of the benefits that could be derived from Telecare. However, the development of Telecare within Kent Social Services was often seen as a top-down development imposed on local operational teams.

➢ Generally frontline staff were positive about Telecare and recognised the benefits that Telecare could provide for users, carers and the Directorate. They noted that other staff had expressed some concerns about the 'Big Brother' aspects of Telecare but those familiar with the system had no such anxieties. Front-line staff appreciated the opportunities they had had to familiarise themselves with the technology both through information sessions and by visiting the demonstration units. If they had any concerns or wanted any information then they felt the Telecare team were approachable and helpful. While some frontline staff felt that Telecare was suitable for individuals with dementia, most emphasised the capacity of Telecare to provide reassurance and a sense of security and therefore considered Telecare especially helpful in reassuring clients whose confidence had been undermined either by ill-health or by crime. Generally they felt that Telecare benefited clients but some frontline staff did express concerns about the additional pressure which carers might experience as a result of Telecare, especially if monitoring centre operators respond inappropriately to calls.

➢ Frontline staff stressed the importance of getting the human components of the system right. They felt that it was important that this aspect of Telecare was adequately resourced so that users could be properly assessed and supplied with appropriate equipment, monitoring centre staff were able to deal with calls effectively and there was a support system in place to provide an effective response.

➢ User perceptions were very positive about Telecare. The majority of users felt that the equipment gave them a sense of security, increased independence and had worked well in emergencies. Users talked about feeling 'more relaxed', 'more independent', and 'safer' with the Telecare. They felt that the monitoring centre staff who responded to their calls were both reassuring and helpful. Some users were concerned about triggering the alarms accidentally though they reported that when they had done so the conduct of the monitoring centre telephonist had been very helpful and reassuring.

➢ The overwhelming majority of users did not feel that they were actively engaged in the decision to install Telecare. Despite this, they generally found most of the equipment acceptable with the possible exception of the falls detectors which were

felt to be bulky, uncomfortable and oversensitive to movement. Users did not think the equipment was stigmatising with the possible exception of the pullcord in bathrooms. However, even though users found equipment such as pendants acceptable, only a minority of users reported wearing the equipment all of the time.

➤ Some users and carers felt that Telecare has improved people's health by reducing the number of falls and averting a move to or stay in hospital

➤ Carers found the equipment both useful and acceptable. Carers who felt obliged to provide close support and supervision reported that the equipment allowed them to reduce the level of surveillance which they provided. However carers supporting individuals with dementia did indicate that Telecare increased the number of times they were required to attend to the person they cared for.

➤ Carers felt that Telecare should form part of a package of services including advice on benefits, or information about other services available.

➤ The positive responses of clients and their carers back up KCC's original view that this is an innovation which can offer real benefits for older and disabled people. Indeed, it is reassuring to find that most people felt that it increased their independence and that it helped them to continue living in their own homes. Importantly, these findings, especially if they can be later substantiated by a more quantitative evaluation of the impact of this project, would support performance targets which are top KCC priorities

Recommendations

➤ Service integration A successful Telecare service should serve as a catalyst for improved service integration. Focused around the needs of the person in their own home, with a range of response and support services available depending on their changing needs, Telecare should include a process of signposting to community services that are already available and which may then be used in a preventive mode. More work is clearly needed in Kent to establish the right links with local services – which vary from area to area, reflecting the diversity of Kent in order to ensure that Telecare can achieve its potential in this way.

➢ Human elements of the system There is a danger that efforts will focus on the technological aspects of the service, but it is important to recognise and assess the human elements of the system. The implementation of Telecare requires appropriately qualified and experienced staff to recruit service users into the service; identification of monitoring centres that have the appropriate facilities to receive and take actions on calls and maintain necessary records; and the development of an appropriate response mechanism by agreements with named contacts, informal carers or with an appropriate service. For carers who are supporting people with dementia, but also potentially the case for all carers, there is scope for more formal back-up mobile response services to provide more respite for informal carers, otherwise Telecare may increase the pressure on them.

➢ In developing Telecare a number of factors will need to be taken into account:
Local ownership especially in mainstream services While the provision of information and demonstration units can increase interest in and awareness of an innovative service such as Telecare, without the development of local ownership innovations are likely to remain outside, even resisted by, mainstream services. Training and awareness raising events can help maintain interest and sense of ownership.

Importance of quality of call history data It seems probable that the monitoring centres are using different criteria and approaches to recording the nature of calls and the action they had taken. If this is the case the data has little value for auditing and monitoring the service provided. If Kent Social Services want to use such data to monitor the delivery of the service then it is important they provide clear guidelines about the type of data they want recorded and the format of the recording and take measures to monitor the quality of the data.

A priority of long-term planning will be to develop a better understanding of how the developing service will need to continue to evolve to keep pace with innovations in technology, as products become increasingly sophisticated and intelligent to particular needs. For example, it is likely that in time, Telecare and Telehealth devices will be routinely available in an integrated form (rather than being quite separate items of technology, as they currently are in the Kent experience). It will be

important to maintain product champions who can support the continued prioritisation of Telecare in Kent and who can keep abreast of these developments.

➢ Wider context It is important to ensure the development of Telecare within Kent is linked to broader developments. Telecare developed out of and is still grounded in the community alarms infrastructure. The basic community alarm package consists of a lifeline, pendant, and link to a community alarm centre. This project did not compare Telecare with the basic package so it is not clear what additional advantages are offered. However, it may be the case that more careful targeting of the telecare service is required so that those who do not need a more complex system can utilize the community alarm infrastructure that is already in place. Strategically, it will be of benefit to the citizens of Kent if all responsible local authorities, guided by the strategic overall leadership of KCC, secure a high-level, multi-agency consensus on the future of Telecare services in the County, and a wider understanding of how services will need to change and develop in order to achieve best value for all involved, with integrated provision which meets the needs of communities.

➢ Partnership across Kent This consensus also needs to incorporate the NHS commissioners in the County, because health services and practitioners will be a key part of the wider infrastructure supporting integrated Telecare services. A clear plan for future funding arrangements will be needed. It is probable that the majority of future clients will purchase the service privately, since most Kent residents are not Adult Social Services clients. The strategic alliance needs to exert its influence to ensure that the wider community can access high quality products at a reasonable price.

➢ Evaluation While small scale case study evaluation can demonstrate the potential benefits of Telecare, they cannot demonstrate the full costs and benefits. It is also difficult in the small scale study to separate out the effects of different factors. For example, the enhanced user satisfaction and confidence may be the product of the enhanced telecare package; it could be the product of one component of the package such as the alarm call; indeed it could even be a 'Hawthorne effect' i.e. the product of the increased attention associated with being in a pilot study. It is

therefore important that KCC explores the possibility of contributing to a large trial designed to separate the effects of different parts of the intervention. While trials involving complex interventions are both expensive and raises ethical issues, it is important that social care develops an evidence base to justify its technologies so it can compete effectively for the allocation of resources. Furthermore there are a number of funding sources which could be exploited to support a larger scale evaluation.

INTRODUCTION

The Centre for Health Services Studies at the University of Kent monitored and reviewed the development of three pilot Telecare projects in Kent on behalf of Kent Social Services. The aim of the project was to monitor the implementation of Telecare within the pilot sites to identify the key lessons to be learnt so that such lessons can inform the full rollout of the programme across the whole Social Services Directorate. The objectives of the project were to:

- Examine how the service developed and the factors which shaped its development;

- Analyse the nature, application and impact of the technology on users, carers and providers especially in terms of the experiences of service users and the outcomes of specific interventions;

- Identify the type of infrastructure that was needed to support Telecare and make recommendations for the development of a full service from the pilot.

At the start of the study, Social Services used the term 'Assistive Technology' to refer to innovations being developed within the pilot study. Assistive Technology is a relatively broad concept that can be applied to any technology providing support for clients:

> Any item, piece of equipment, product or system that is used to increase, maintain or improve the functional capabilities and independence of people with cognitive, physical or communication difficulties (Audit Commission, 2004, page 3, para. 2).

Within Social Services the terminology subsequently shifted to 'Telecare' as the emphasis moved from the technology to the service provided. Telecare can be defined as:

> Care provided at a distance using information and communication technology (ICT). Telecare is the continuous, automatic and remote monitoring of real

time emergencies and lifestyle changes over time in order to manage the risks associated with independent living (ICES, 2004, p.6).

Telecare can form the platform for Telemedicine which focuses more on health and medical care than social care. Porteus and Brownsell (2000) define Telemedicine as:

> The practice of medical care using interactive audio-visual and data communications, which includes medical care delivery, diagnosis, consultation and treatment, as well as education and the transfer of medical data (p.20).

Telemedicine is a subset of Telehealth and refers to remote management of a person's health and illness by qualified medical staff. Thus the patient may be in any location. Telecare, by contrast, refers to the remote management of a person's care within their own home. Doughty argues that vital signs monitoring of a person in the home should be referred to as 'Medical Telecare' and not as Telemedicine (Doughty, 13th February 2006, personal communication). In Kent, this is referred to as 'Telehealth'. These definitions have often been fluid, however, and there has been a high level of debate around their interpretation.

1. TELECARE: RESEARCH EVIDENCE

1.1 The Need for Telecare

Interest in Telecare is driven by a number of factors including concerns about how public services are going to meet the needs and expectations of an ageing population and how health and social care resources can be used most effectively to enhance independent living in the community.

Improving the quality of services

While there are concerns about the cost and sustainability of providing support for an ageing population, there is also an awareness that the quality of services needs to be improved so that older people have a choice about where and how they live. In particular older people should have the right to live independently in their own homes. The Audit Commission published five reports which examined the ways that public services can support the independence and well-being of older or disabled people (see 2004b). The reports indicated that 80% of older people want to live in their own homes. Older people want a future where they have greater control over their own lives, including managing their own risks, independence and the right to be treated with dignity (see also Bowling et al., 2002; Wistow, Waddington & Godfrey, 2003). The Audit Commission reports suggest that the overall approach to older people needs to change, that health and social services must reshape the ways in which they work to support and promote independence.

The Audit Commission (2004b) reports suggest that a proactive and preventative model of care, promoting health, independence and well-being among the general population is cost-effective. Telecare has the potential to support individuals to live at home and to complement traditional care. It can be used to prevent problems from arising, by providing evidence of a change in the person's health for example, or of a reduction in activity that could indicate deterioration in the person's condition. It can also help informal carers improve their quality of life, reducing their anxiety and stress by providing reassurance that support is available 24 hours a day. Professional carers and statutory services benefit from an additional care option which provides better resource management, fewer hospital admissions, a reduction in delayed discharges and which encourages self care and prevention amongst individuals (Audit Commission, 2004b).

More recently, the government Green Paper 'Independence, Choice and Well-being' (Department of Health, 2005) and subsequent White Paper 'Our Health, Our Care, Our Say' (Department of Health, 2006) set out the Department of Health's vision for the future of health and social care services. The White Paper advocates more personalised services that fit into people's lives and the reorientation of health and social care services to focus together on preventive and health promotion, shifting care to 'more local, convenient settings, including the home'.

The limitations of a reactive approach to service provision can be seen in the evidence on falls amongst vulnerable adults. Falls are a major cause of disability and the leading cause of mortality due to injury in older people aged 75 and over in the UK (Department of Health, 2001). Falls can be a precursor to a move to residential care, so they are a major issue due to consequent care costs (Seale et al., 2002). The NHS spends £1.7bn a year on treating fractures from falling. After a hip fracture 50% of older people can no longer live independently. Many older people live in fear of falling, which may possibly lead to adverse changes in lifestyle (Richardson, 1993), such as self-neglect, loss of self-esteem and depression (Tinetti, Speechly and Ginter, 1988). Falls may also lead to the fear of walking significant distances, leading to isolation which reduces mobility in the longer term (Brownsell and Hawley, 2004; Doughty, Lewis and McIntosh, 2000). When services are designed on a more proactive basis through the early detection of the risk of falls this can offer the reassurance and confidence necessary for an active lifestyle. Additionally, a rapid response to a fall decreases the likelihood of hypothermia, feelings of fear and anxiety, and further complications.

Modernising services
Recent reports and policy documents have identified new ways of working that take advantage of new and developing technologies designed to meet the diverse needs and aspirations of vulnerable adults living in the community by providing responsive, modern, person-centred services. The Government outlined its commitment to *Modernising Social Services* (Department of Health, 1998) and to promoting people's independence ensuring that vulnerable people were effectively protected, and to raising the standards of services. This modernisation programme involved the development of integrated services, to ensure services identified and managed risk and prevented accidents, which undermined independence and user and carer's sense of security.

While social care is a personal service in which professionals engage directly with users and carers to assess risk and need and agree a package of service, there has been increasing awareness of the role of technology both in identifying risk and facilitating a rapid response. The initial stimulus for the use of technology came from the housing field in which there has been substantial work on the nature of the built-environment. In 2001, the framework for government housing policy (DETR, 2001), identified the contribution that technology could make in helping older people live safely at home. The Treasury has now accepted the potential for such technology to improve care and prevent harm and in the 2005-2008 Spending Review introduced a new Preventative Technology Grant of £80 million over two years.

Comment

Social care services are faced with the major challenge of providing high quality services to vulnerable people enabling them to live securely and independently within the community and ensuring that carers do not suffer from undue stress and anxiety. Social care services are responding to this challenge with a programme of modernisation. An important component of this modernisation is the development and use of technology, and in the next section we will examine these technological developments.

1.2   The Development of Telecare

Social care has traditionally been based on the personal care and support for vulnerable adults. Technology was limited to specific equipment such as bath hoists and chair lifts. The development of electronic and information technologies in the later part of the 20th century has created new forms of technology that can directly support vulnerable individuals. The first generation of such technology was based on the development of social alarms. Telecare represents a second generation, and there is evidence of a new emerging third generation of smart technology.

Second Generation Technology: Telecare

Telecare systems use electronic sensors that can identify hazards and trigger alarms when the user is unable to do so, for example, because they have fallen and are unconscious or because they do not have the cognitive ability to recognise the hazard. These new sensors can be built into and are therefore a development of existing social

alarms. Commercial manufacturers have developed devices which users can wear which detect and automatically report falls and other potentially hazardous movements. The technology is not restricted to pendants. Sensors can be attached to beds, chairs, doors and throughout dwellings so that they can identify a range of hazards such as extreme ambient temperatures, and detect smoke and carbon monoxide. They can be programmed to automatically relay alerts to a named carer or monitoring centre and when they are attached to domestic appliances, such as cookers, can also be programmed to shut down the equipment when necessary. These systems can be tailored to specific user needs, for example, if a user has short-term memory loss then a sensor on the front door can identify and provide a warning the front door has been left open.

Telecare information can be sent directly to a carer's mobile phone. However, most systems are linked to existing centres which deal with social alarms. When a sensor or pendant alarm is triggered this information is sent to the call centre. An operator at the centre then interprets the information and makes decisions about the appropriate response. Normally the operator will call the user and talk to them. If the operator does not receive a response or is concerned about the response they have received they can either call the emergency services or a named contact and report what has happened. The named contact then decides how to respond; normally they would visit the user and assess the situation and offer help if necessary. These contacts can be family members and neighbours selected by the user to give help or act as key holders to enable others to enter the home, or can be employed by the response service.

The Third Generation of Technology
In 1996 Doughty, Cameron and Garner set out a vision for a third generation of technology to create the 'virtual neighbourhood', in which telecommunications services linked people with primary and secondary care services, substituting physical visits and reducing feelings of isolation and loneliness. Services that come under the 'virtual neighbourhood' cluster would include tele-banking, tele-shopping, tele-psychiatry, tele-pharmacy and tele-exercise. New descriptions of future technology and communications developments have moved away from Doughty et al's vision, however, and have been defined more for the ability of the technology to bypass control centres to some extent, offering more choice and wider availability. A new concept in

healthcare aimed at providing continuous remote monitoring of users vital signs is emerging.

Comment

Technological developments, especially the development of more intelligent, fine-tuned and responsive systems, offer considerable potential for the modernisation of social care. It is important to note that the new systems do not just involve technology, they also include the changed working relations that are needed to make that technology work, e.g. the relationship between the user, the monitoring centre and formal and informal carers who can respond rapidly when alerted. As Jeremy Porteus has noted in the Association of Social Alarm Providers' Annual Report (ASAP 2004, p.8) a Telecare service requires a networked response, and needs to be part of an integrated package of care provided by housing, health and social care to meet the changing needs and lifestyles of the ageing population.

1.3   Factors Influencing the Take-up of Telecare

There is a developing evidence-base for Telecare. Currently much of the evidence comes from agencies promoting the technology such as the Audit Commission, and commercial organisations, e.g. Tunstall Group, but there is also a growing body of work from independent researchers, which we will explore later in this chapter.

A number of barriers have been identified in the literature which have the potential to hinder successful implementation, and these can be broken down into areas such as: strategic, technical and organisational issues, cost, user acceptability and ethical issues. These barriers are not unique to Telecare; they can affect most innovations.

Strategic issues All stakeholders, from health, social care and housing need to be involved in the development and implementation of Telecare. The government has a role in setting a coherent framework across the sectors responsible for care provision and creating an environment that encourages interdepartmental and interagency co-ordination for the delivery of Telecare (Tang, Curry and Gann, 2000). Telecare projects need to be supported by robust management and senior managers and members who have clear vision and measurable objectives, supported by evaluation so that Telecare

can move beyond pilot and research projects and become accepted as a 'mainstream' service (CSIP, 2005, p.22).

Organisational issues Agencies are often risk averse, i.e. committed to tried and tested ways of delivering services, and staff may be reluctant to change their working cultures, committed to 'custom and practice' that they believe works, and is professionally sanctioned. The policy environment in which Telecare is placed is evolving rapidly so there are likely pressures on resources and shortages of staff as a consequence of reorganisation (Audit Commission, 2004). Staff need to adopt new learning, new roles and responsibilities and have time to develop internal and external partnerships if the Telecare service is to succeed.

Workforce development and staff training allows staff involved in the delivery of a Telecare service fuller understanding of what the devices do and how the service can be effective for the users. Awareness workshops are a good introduction to the service and staff development training packages can encourage continual knowledge development (Barlow, Bayer and Curry, 2003, p.1-3; Waddington and Downs, 2005, p.43). Identified champions, either frontline staff or managers can also encourage and have the enthusiasm to inspire others (Columba Project, 2005). Commitment from leaders and managers within partner organisations, for example, through a project board, can also support the work of frontline staff (CSIP, 2005, p.22)

Technical issues If an agency invests in and becomes committed to a particular system and supplier, there may be problems if for any reason they decide to change suppliers or if clients purchase their own equipment. These may include integration and compatibility problems. There is, therefore, a need to explore potential technologies that are compatible and 'future proof' (Audit Commission, 2004b). There is also the danger of the 'hard-sell', manufacturers overselling the benefits of the technology and decision-makers taking an equipment-led rather than person-led approach, i.e. looking for ways of exploiting the potential of sophisticated equipment rather than considering what equipment is needed to enhance users' quality of life. Fisk (1997, p.30-32) has argued that the equipment should always be deployed in such a way that empowers the end user.

Cost Telecare requires an initial investment of resources in purchasing equipment and setting up support. If there is no charge for the service, there will be an initial increase in costs. There may be perverse incentives. For example, if there are financial benefits, such as reduced hospital admissions, these benefits may accrue not to the social care agency that is funding the Telecare scheme but to the health care agency providing acute hospital care. At present there are no economic evaluations of Telecare, i.e. no large scale cost-benefit analyses, as most of the current schemes are small scale pilots and there are problems in assessing direct and indirect costs of the development of Telecare against alternative solutions (Constantelou and Zambarloukos, 2002).

User acceptability If users and carers' needs are not fully taken into account this may impact on their acceptance of Telecare, creating concordance issues, as some individuals may feel reluctant to use technology (Fisk, 1998). Actively involving users, carers and voluntary organisations, providers can ensure that their needs and aspirations are met, improvements to services can be identified, and outcomes are better and more relevant. Peeters (2000) suggests that older people are interested in products that fulfil their needs, and that their acceptance of technological innovations is determined by the perceived immediate benefits to their own lives. They tend to accept products that improve their ability to live alone, to remain integrated in society and to live a normal life. He pointed out that some equipment may be resisted because it has developed a stigma, such as pendant type alarms for example, which may be associated with illness and dependence.

Ethical issues Telecare can create ethical issues around choice, consent, surveillance and the possible loss of autonomy and privacy as well as legal issues relating to confidentiality and data protection. The problems are particularly acute when the primary user is mentally impaired and, as a consequence, there have been particular concerns about the use of 'tagging technology' to deal with 'wandering'. Gillies (2001) argues that it is not the form of technology but how it is used that determines the ethics of its use. Telecare must be seen to support independence within an overall care plan, rather than to control problematic behaviour. The issue of informed consent is also important, especially for those with cognitive impairments. When to seek consent, how often and from whom are all decisions to be made before implementation.

Comment

New and emerging social care technologies offer considerable opportunities to improve the quality of care and independence. While it is possible to identify the benefits there are also barriers to implementation and there is emerging evidence on how such barriers can be overcome. It is vitally important that the development of Telecare is user or person-centred, and not equipment led. Such an approach will increase the acceptability of the development as well as help to minimise practical and ethical problems.

1.4   Evidence of the Effectiveness of Telecare

Since Telecare is a relatively recent development, current evidence on its effectiveness is limited to case study evaluations of specialist projects or trials. Most applications of Telecare have been in controlled environments with a limited number of people and few Telecare devices have been employed as part of a comprehensive and mainstream Telecare service (ICES, 2003). Currently there are no large-scale studies of Telecare using randomised control trials to assess the impact of Telecare on users and carers, nor as far as we are aware have any such studies been commissioned. However evidence is beginning to emerge from small-scale studies of pilot projects, market driven product evaluations and product development projects. In this section we consider the evidence from projects providing services to a wider range of client groups, from projects focusing on the particular needs of users with dementia (and associated risks) to projects experimenting with new forms of technology.

The second generation of technology draws on the work of Celler et al (1995) who showed that the health status of older people could be determined by monitoring the interaction of the individual with his or her environment, using parameters such as mobility, utilisation of cooking facilities and sleep patterns, for example. They found that 50% of those involved in the study had undetected medical problems that could be identified by home monitoring (Curry and Norris, 1997). As yet work with this new generation of technology is essentially developmental and experimental and so the published accounts tend to be descriptive in nature, and as yet there is little evaluative data.

Trialling Telecare in mainstream services

The *North Cumbria Project* developed out of an existing community alarm service and a partnership based 'Intermediate Care' service (Brewis, 2004). The Telecare element was designed to support the Intermediate Care service in achieving its main objectives, that is, to reduce hospital admissions of vulnerable adults and facilitate discharge from hospital.

Since the scheme was introduced in 2002, health staff in the district made referrals, with 739 individuals having received the service. The evaluation by Carlisle Housing Association indicated that Telecare helped the intermediate care project achieve its objectives.

The evaluation found that 85 clients were prevented from going into hospital. 73 per cent of the Telecare packages were installed to support a transfer of care and 12 per cent have prevented admission to hospital. 32 per cent of the packages of care were used to monitor clients at risk of falling. Brewis (2004) concluded that Telecare could play a key role in supporting services that enabled individuals to live independently in the community.

The Sandwell Project Waddington and Downs (2005) have reported on the Sandwell Metropolitan Borough Council's (MBC) Housing Department Telecare pilot. The service was piloted in January 2003 as an add-on or extension of an existing Community Alarm Service. The policy objectives included:

- enabling users to live more safely at home;
- assisting in the process of hospital discharge;
- preventing admission to hospitals, nursing or residential homes;
- supporting falls and accident prevention strategies;
- providing support for carers.

Waddington and Downs reported that the pilot achieved some of its objectives. They estimated that 48 out of the 100 users were able to stay at home, while 22 had a fall or accident prevented. While it does appear to show that Telecare can play a role in reducing accidents and enabling vulnerable users to live independently in the

community, without a control group it is difficult to be sure how far these positive effects could be attributed to Telecare alone. Interviews with health and social care staff indicated that they did not feel the Telecare service had been absorbed into mainstream consciousness or practice. They attributed this to the 'low' visibility of the pilot.

The *Northern Ireland Project* In Northern Ireland Fold Housing Association worked with 14 Northern Neighbourhoods Health Action Zones to develop and implement Telecare. Fold Telecare is the largest social alarm monitoring and response service in Northern Ireland and supports 20,000 customer connections. The aim of the project was to utilise innovations in technology to develop a Telecare service which enabled and supported older people to feel safe in their homes.

Telecare systems were installed in 153 units over 15 months. Houghton, Fisk and Fisk (2005) undertook an evaluation including interviews with users, carers and key agency stakeholders. Results indicated that installation of the Telecare packages with related 24-hour support services had a positive impact on the lives of the older people. Both users and carers reported that users' confidence had increased, as did their independence and feelings of security and safety. The service seemed to have been a factor in enabling some people to remain living in their own homes, as 26 per cent of users reported that they had been thinking of moving before they were offered Telecare support.

In interviews with service stakeholders, Telecare was perceived as having had a preventative and responsive role, facilitating independence and providing reassurance and peace of mind for users. Despite the project being linked to hospital discharge, stakeholders were divided over whether or not Telecare could facilitate discharge or reduce admissions to care by itself. Telecare was successful mostly as part of a package of care which responded to individual needs, and which included community and family support (Houghton, Fisk and Fisk, 2005).

The *West Lothian Project* In Scotland a partnership has established an innovative project using Telecare, called the 'Opening Doors for Older People' project. The partnership draws on central government and local authority funding, plus contributions from the private sector, and is being implemented by a public (West Lothian Council)

private (Tunstall Group) partnership. The aims of the project are to shift investment to sustain independent living through effective housing design, individual care planning and new technology.

The core package of devices focused on safety, with additional technology added to meet individual needs. The project is being implemented in three phases (Bowes and McColgan, 2005):

- *Pilot phase* (1999-2002) Packages of smart technology were installed in 75 homes. The implementation was supported by a Home Support Team.
- *Development phase* (2002-2003) Smart technology was installed in a further 1200 homes. The Community Care Alarm Service developed into a full Home Safety Service that was responsible for a core package of basic home safety and security, and included a multidisciplinary team of care and support workers.
- *Full implementation* (2003-ongoing) involves making the Home Safety Service available to all people aged 60 or over and other vulnerable people living in West Lothian as a precursor to the eventual rollout of smart technology (approximately 10,000 households), for a weekly cost of £4.87. If the person seeking the service is under 60 years of age they may be eligible following a needs assessment by the Health and Care Team.

Early results from the project demonstrated that users remained in the community longer and hospital delayed transfers of care were reduced to 2.14 per 1000 population compared to the national average of 3.48 per 1000 population (Audit Commission, 2004).

In their report Bowes and McColgan (2005) discussed findings from a survey of users and carers. The overall response to the technology was positive. Respondents commented on the ways in which the technology enhanced users' safety and security. Technology was only one element of the support received, however, providing effective supplementary support to that provided by families, neighbours, communities, and carers. Indeed, the support for informal carers supplied by the technology was reportedly significant.

The *Lifestyle Monitoring Telecare System* is based on a British Telecom and Anchor Trust partnership and is funded by monies from The Housing Corporation through an Innovation and Good Practice Grant, and British Telecom itself. The aims of the project were to:

- investigate the feasibility of using new technology to monitor the lifestyle of older people;
- examine older people's views on the technology;
- assess if the technology worked, i.e. improved health;
- examine the implications this would have for housing, care and support providers.

5,000 days of lifestyle data were collated from homes in Newcastle, Liverpool, Ipswich and Nottingham. A normal pattern of behaviour was generated for 22 participants, and from there it was possible to look for deviations which, when detected, would activate an alert call to the user. The user was asked to respond by telephone whether they needed assistance or not. If they did not reply or they asked for assistance, a nominated carer would be asked to respond.

The pilot was evaluated independently by the Institute for Human Ageing at the University of Liverpool (Porteus and Brownsell, 2000). The feedback from users was positive and many felt that the system enhanced their feeling of well-being – the system was acceptable, care choices were increased, over half the users felt safer and more secure in the home and more confident, and it reduced their fears and apprehensions of falling or becoming ill. 47 per cent said that it helped them to stay at home. Some users were anxious about causing unnecessary alerts, had concerns about loss of privacy and a feeling of being watched. Nevertheless, most were satisfied with the system, as were 86 per cent of carers. 93 per cent of carers believed that the technology was a good thing. In addition, 64 per cent believed that the Lifestyle Monitoring System was more effective than community alarms alone. The Lifestyle system does give some indication of the ways in which the third generation of technology will develop and its likely impact.

Comment

There are limitations to current evaluations. They are case studies which use interviews and focus groups to access user, carer and provider perspectives. In some cases

private companies that clearly have a vested interest carry out these evaluations. Despite these limitations, it is possible to identify some positive findings. The technology is clearly acceptable to users and carers and there are reports that it provides a sense of security and enhances confidence. This may be linked to improved outcomes, e.g. improved ability to live independently in the community. However, without a properly controlled trial it is not clear whether this is a Hawthorne effect, i.e. a product of the special interest and attention generated by a researched pilot study, or a real effect which can and will be reproduced in routine mainstream services.

Using Telecare to Support Vulnerable Adults Suffering from Dementia

There are barriers to using technology to support individuals with dementia. These include: the difficulty of getting informed consent; a prevalent attitude amongst professionals and informal carers that human care is the only form of support which is appropriate; difficulties in identifying appropriate technology to be used for each individual; assessment that fails to identify specific risk factors in the accommodation of people with dementia; lack of knowledge on how to install and integrate devices into a system; and relative and carer anxiety about the use of the technology. There have, however, been a number of projects specifically designed to support the development of services for people with dementia, although currently reports on these projects are very limited.

The ENABLE project: European perspectives This project was funded by the European Commission under the 'Quality of Life and Management of Living Resources' Programme and involved a collaboration between five countries including Norway, England, Ireland, Finland and Lithuania (Gilliard and Hagen, 2004). The main objective of ENABLE was to investigate whether it was possible to facilitate independent living for people with dementia and to promote their well-being through access to enabling technological systems and products. Five devices were tested in each country; for example, a gas cooker monitor and an automatic night light. 129 participants were recruited, but after three months 49 had dropped out.

A number of factors that could impact on the degree of use and usefulness were identified from quantitative and qualitative analysis. For the person with dementia,

these factors comprised the stage of disease and cognitive functioning in regards to their ability to understand and make use of the device, and their relationship with the primary caregiver. For carers, their motivation, willingness and ability to assist the person with dementia was a significant contributory factor to use of the device. In all countries except Ireland, caregiver burden levels decreased over time. The role and attitudes of professional health and care personnel and the appropriateness of the home surroundings for the implementation of a device also had a role in the outcome of the evaluation.

The *Safe at Home project: Northampton* Woolham (2006) reports on the second phase of the Safe at Home project, which looked at the effectiveness of assistive technology to support people with dementia and their carers. The main aims of the project were to:

- Assess the reliability of the technology;
- Assess the extent to which the technology supported unpaid carers and relatives;
- Assess the success with which technology helped people with dementia to maintain their independence;
- Examine the cost-effectiveness of technology.

Three project workers were employed within Care Management teams and were involved in assessment, sourcing and installing equipment. Criteria for inclusion included a formal diagnosis of dementia. There were 326 referrals made from Care Managers and Community Mental Health Nurses, 291 of whom were assessed. 233 of these received the technology following a holistic person centred assessment of need. There was a control group of 173 people, with similar age and gender profiles, but who had no technology fitted. Prior to and following the project the control group received more services, more visits and more contact hours per week than the Safe at Home users. Data was collated from: the Project Workers during referral, assessment and the quarterly reviews; the Community Services management system; Social Services electronic and case files; local NHS Patient records; and finally a postal survey of carers and relatives of the Safe at Home service users.

Some equipment was standalone and some connected to a monitoring centre. The technology was found to be reliable. 70 per cent of 123 carers responded to the postal

survey. Findings showed a reduction in stress over the period of the project; 87 per cent felt that it had made a difference to their sense of concern for the safety of the person they cared for; almost half felt that the project had improved the confidence of the service users in their ability to look after themselves safely. In terms of maintaining the independence of the service user, the numbers of people leaving the community were compared. 42 per cent of Safe at Home users left the community, compared to 76 per cent in the control group. In terms of cost effectiveness, the Safe at Home service users had fewer weeks of residential care, nursing care and time in hospital. Overall, there was a potential saving of almost £1.5million over the 21 months.

Comment

Telecare is a rapidly developing field, therefore it is important to undertake evaluation so that the evidence base keeps pace with the developments. Such evaluation should demonstrate the benefits and problems for all stakeholders involved, including users, and help to support strategic decisions and procurement. A particular problem with evaluating Telecare interventions relates to the diversity of user population and the conditions and environmental context. There are few schemes and they are mostly too recent to generate data of a sufficient scale and scope. Telecare projects to date demonstrate, however, that Telecare has a key role to play in delivering effective, client centred services, and for sustaining independence and promoting healthy ageing in a safer, home environment. Telecare can be used in a number of different settings, including in intermediate care and rehabilitation facilities, supported and specialist housing and care homes, and in people's own homes. Telecare supports people to maintain their independence through a range of technologies, from home security and safety devices including smoke and heat detectors, crime surveillance monitoring systems, and gas sensors, to monitors that record patterns in individuals' movements and thus detect unexpected changes to people's routines. Through monitoring the safety of vulnerable groups, such as frail older people or people with dementia who live alone, Telecare can support a reduction in hospital stays by enabling earlier discharge or delay or even prevent a move into residential care (Audit Commission, 2004).

Although the potential of Telecare to support the independence and well-being of older, vulnerable people is established in a number of studies, its development remains characterised by isolated research activity, pilot studies and ad hoc schemes based

around more mainstream community alarm services. The next stage in the development of Telecare services is to become part of mainstream services to benefit a larger number of potential users. Bradley et al. (2002) argue that what is necessary is a needs-led and systems-based approach to the development of technologies for Telecare which is structured around stakeholder need and which can grow to accommodate changes in client need as well as to new technologies as they become available. Technology can then be matched to need to maximise resources.

The recent Wanless Social Care Review, 'Securing Good Care for Older People' (2006), acknowledged that there was a lack of rigorous data on the cost implications of telecare due to the nature of the current evidence based on small scale, short-term trials and evaluations, and even fewer attempts at modelling the potential cost effectiveness of the introduction of telecare on a larger scale. According to the Wanless Review, however, there is enough evidence to suggest that telecare services should shift into the mainstream, despite the difficulty in predicting the impact on costs.

2.   TELECARE IN KENT

In this chapter we draw on interviews with stakeholders to explore why and how Kent Social services adopted Telecare and developed three Pilot Schemes.

2.1   Initiative for Telecare in Kent

The initiative for the development of Telecare within Kent Social Services came from Members (senior councillors) and Directors (senior managers) who acted as 'product champions'. They felt that Telecare would help Social Services achieve some of its key objectives and targets, especially those related to the 'Active Lives' Strategy which has the objectives of:

> Keeping people independent, trying to reduce admissions to residential care and hospital and trying to promote well-being (Interview, Senior Manager).

The initial interest in Telecare was stimulated when key Members and senior managers attended a Telecare conference and followed this up with a visit to a social care service which was using Telecare:

> It was a good idea. They (the product champions) were very impressed by what they saw at a conference, they went to see the Fold project in Northern Ireland and they were very impressed with their results, successfully helping people to stay at home and so on, and I think they wanted to have some of those benefits. It wasn't really ever more specific than that, we never said this was about promoting the independence of older people or disabled people, it was about generally promoting independence (Interview, Senior Manager).

The commitment of high-level 'product champions' within KCC was the key catalyst for the development of a strategy to use Telecare. As another senior manager noted:

> [There was] a high level dedication including County Council members, who are ultimately the decision makers, [and who went] to West Lothian and Northern Ireland to learn from what had gone on. And that I believe is the genesis of the project.

The interest in the Directorate was stimulated by a number of factors. The Directorate has established itself as a lead agency in social care and this is recognised with a 3* rating; and Kent County Council was one of the first to sign a Public Service Agreement directly with the Treasury. To sustain its position KCC and its Social Services Directorate needed to deliver on agreed targets:

> If I'm truly honest, the reason we went into the Telecare project, was that some of our senior politicians and directors became aware of Telecare and generally felt it could be enormously beneficial to help us achieve those targets [keeping people independent, trying to reduce admissions to residential care] (Interview, Senior Manager).

However, achieving targets was only part of a broader strategy of creating a broad and integrated service for people living in Kent with KCC playing a lead role in bringing together health and social care support:

> I think that everything we're doing in Social Services has to be seen within our overall vision which is the Active Lives strategy…The Local Government Act gives us the power to promote wellbeing. And I think Kent County Council sees itself as a community leader in that sense, so we have increasingly become involved in activities which don't necessarily only help Social Services, but if successful will help health with their targets and so on as well (Interview, Senior Manager).

Telecare could enhance independent living in two ways. It could provide a rapid response minimising the harm of an unanticipated incident such as a fall, and it could enhance user and carer confidence by providing a sense of security that there would be rapid response if an untoward incident occurred:

> *Service manager*: That's part of it, reducing anxiety, it may be that somebody doesn't ever use it but they feel better because it's there, in a larger sense it's about prevention and it's also about helping people manage in times of crisis, it's about both.
> *Interviewer*: And so one sense is the psychological, making people feel more confident about being in their own homes.
> *Service manager*: And carers…
> *Interviewer*: The other one I presume is the rapid response, if something goes wrong then through Telecare there could be rapid access to help and support?
> *Service manager*: Yes, that's also part of it.

If Telecare does enhance independent living then there should be a number of measurable outcomes:

- A reduction in admission from home to residential care;
- A reduction in admissions to A & E and Acute Hospital care;
- A reduction in the number and length of delayed discharge from hospital;
- An increase in levels of confidence in users and carers that they can continue living in their own homes.

2.2 Implementation

The Directorate recognised that implementation required careful management and created a clear structure to link the project champions with operational managers and front-line workers developing the system. The Directorate appointed a Project Manager (April 2004) and an Administrative Assistant (September 2004) to oversee the implementation. They provided the crucial link between the strategic level, operational management and service delivery. At a strategic level the Project Team reported to a Project Board of key Directors and Senior Managers who were responsible for informing strategic development within the Directorate. There were also regular reports to Cabinet Members. At operational level there were Area Groups in two of the three areas (Mid and East Kent) which the Project Team used to keep Area Heads of Adult Services informed of developments. At a local level there were District Steering Groups which the Local Implementation Team including Project Team Members, the Care Management Team, Occupational Therapy Staff and providers could use to ensure regular communication, to keep informed of activity and to identify ways of facilitating implementation.

The initial project leaders recommended that Social Services should pilot Telecare in three sites, one in each Social Service area; locally in East Kent, Mid Kent and West Kent. The product champions were committed to the incorporation of Telecare within Directorate's mainstream services but felt that pilots would provide an important learning opportunity. The Directorate could then identify and deal with emerging problems and prevent them from undermining the effective county-wide implementation of Telecare. One senior manager described the rationale for the pilots in the following way:

> [The pilots were] Coming back to this whole idea as to fully understanding what we need to do in terms of changes within frontline service, what we need to do in the wider scheme, but also how this will impact on our providers and managing the market. If you look at it from a risk point of view, you could have done that but would you have been able to manage it and contain it? With this approach, we certainly have a better idea and then we'll be able to rollout because that's the ultimate aim, to have it comprehensively available (Interview, Senior Manager).

While the project leaders had agreed to the purchase of Telecare equipment (expenditure on equipment during 04/05 was approximately £157,000 and £47,000

during 05/06), systems had to be put in place so that the equipment could be used effectively. The system had three main components:

- *Assessment and Installation of Equipment* This involved an initial referral and follow-up assessment to see if the system would be suitable for the user. If it was suitable an agreement was negotiated with the user and then the equipment could be installed in agreement with the user followed by training in its use;
- *Monitoring Service: The Call Centres* An agreement had to be negotiated with an agency that had the necessary telecommunications equipment and staff to receive and process calls and keep records that could be used to monitor the use of the system;
- *Response* A mechanism for providing physical (mobile) response to calls.

There were challenges and difficulties in developing all of these supporting systems and all involved negotiation and decision-making.

Assessment and Installation of equipment Installing and providing training were specialist activities that could be done by the equipment suppliers and dedicated staff within the local teams. However before the equipment could be installed it was important to confirm that the equipment was suitable and adapted to the needs of each user. The Social Services Directorate does have a system for assessing and negotiating packages of support and care management. The pilots relied on the Care Managers and Occupational Therapists to undertake their usual assessment and then to make a referral to the Telecare service if it was felt that it would meet assessed need. As the Project Manager noted, referrals for Telecare initially came from:

> Care Managers and OTs. In [East Kent] there was a single OT (who works in the care management team) identified to do Telecare - and she really did [what later became the Project Officer's] job. Elsewhere we really relied on particularly enthusiastic Care Managers and so on to do the referring - and the referral rate was pretty slow to start with (Personal Communication, Project Manager).

Since this source of recruitment did not prove very effective, the Team installed its own Telecare Project Officers in April 2005 to co-ordinate the liaison between key

partners involved to encourage referrals and to negotiate the appropriate equipment for each user. Initially the emphasis was on making the new service available to as many users as possible; there was, therefore, no charge for the service, and relatively loose eligibility criteria. When the service is mainstreamed it will be linked to the standard assessment procedure:

> We now have Project Officers involved. They do a lot of the focused work on Telecare with clients (i.e. matching need to equipment), which has enabled us to get the numbers up to a respectable level, and now we are entering into a new phase where we are aiming to withdraw Project Officers from that individual client role and hand that back to the Care Managers and OTs. Project Officers will become more involved in co-ordination and delivery of training. So we have tried to make the referral form even more simple and linked to the core assessment which care managers complete anyway, and we will be asking staff to make referrals directly to the monitoring centres (Personal Communication, Project Manager).

Monitoring service: The Call Centres The technology depends on a monitoring centre receiving and processing calls. Identifying appropriate agencies to provide such services was not always easy. A local monitoring centre provided monitoring in East and West Kent. Initially KCC tried to work with local providers in Mid Kent but rapidly switched to a national commercial company. The Project Manager noted this development in the following way:

> The initial partners were [local Housing provider], and [local monitoring centres] for monitoring - in Mid Kent we quickly switched to [a national provider] when we realised that [they] were not going to be able to provide a service (Personal communication, Project Manager).

While the providers were effective in dealing with calls, as we will note later in this report the monitoring centres were less effective in recording and providing information which could be used to monitor the effectiveness of the service:

> In terms of recordable data, the call history is a nightmare, it is a mismatch, it actually is a really important piece of the jigsaw…If there is one thing for Telecare to proceed professionally, something that must be addressed is the way this information is recorded and made available to those that are commissioning the service (Interview, Project Officer).

Response Initially the Directorate had not considered the issue of response. As the Project Manager noted:

When I came into post there were no partners involved to provide response - I had to set that up after I started. I don't think the people who first set the pilot up realised the need for mobile response services (Personal Communication, Project Manager).

Kent County Council utilised their in-house provider of home care in Mid Kent, and initially for West Kent. This arrangement was later modified so that response was handed over to a local provider in West Kent. Initially the team employed a specialist team to respond to calls in East Kent but given the high cost of such a service was looking for an alternative system:

Also we are phasing out the use of the Direct Service Units for response in [East Kent] due to their high costs, but we are finding it difficult to find an alternative (Personal Communication, Project Manager).

2.3 Development of the Pilot Sites

The planning group set an initial target of 150 users, 50 users per district in a 6 month period, i.e. over 8 per month. This target was subsequently raised to 100 per pilot site within a year. The first installation was in East Kent in July 2004, Mid Kent followed in July 2004 and West Kent in August 2004. In both Mid and West Kent recruitment averaged between 5 and 6.5 per month so that Mid Kent had recruited 101 by the end of February 2006 and West Kent had recruited 118. East Kent average was closer to 10 per month and total recruitment was 174 by February 2006. However some installations were also removed either because the client had died or had gone into nursing or residential care so by the end of February 2006 East Kent had 141 active users, West Kent 100 and Mid Kent 79. There was an assessment backlog of 32 clients in West Kent but only one or two clients were waiting for assessment in East and Mid Kent (see Table 1). Thus in terms of overall participation the three pilot schemes achieved the target of 100 though one site did not have100 active users and had taken longer than planned.

Month	West Kent Installed	Mid Kent Installed	East Kent Installed
Jul-04	0	1	3
Aug-04	3	0	6
Sep-04	6	1	3
Oct-04	2	0	2
Nov-04	13	2	10
Dec-04	13	2	5
Jan-05	8	7	4
Feb-05	2	5	9
Mar-05	9	5	7
Apr-05	1	4	7
May-05	12	6	6
Jun-05	6	16	7
Jul-05	4	5	29
Aug-05	8	10	5
Sep-05	7	1	4
Oct-05	5	2	6
Nov-05	5	4	4
Dec-05	4	4	10
Jan-06	4	0	8
Feb-06	2	1	4
No date recorded	2	3	0
Assessed/Awaiting installation	2	0	2
Total	118	79	141

Table 1: Installation numbers for all three sites

Twelve devices plus the lifeline and pendant were used in the project during the study period: the Passive Infrared movement sensor, bogus caller button, pull cord, smoke detector, flood detector, temperature extremes detector, gas detector, carbon monoxide detector, falls detector, bed sensor, chair sensor, property exit sensor. There was variation in the type of equipment fitted between individual users. In our survey of 100 users we asked the interviewers to check what equipment had been installed before they visited and then to check the users recollection (see Table 2). Most of the users had the base unit, trigger and smoke detector. Other units were fitted less frequently indicating that the package was being adjusted to individual user needs. User awareness of the package also appeared to be relatively good.

Table 2: Equipment fitted and user recollection

Equipment	Fitted	User recollection
Lifeline base unit	93%	88%
Amie/Gem trigger	86%	84%
Smoke detector	66%	61%
Bogus alarm call	41%	40%
Temperature extreme detector	19%	17%
Bed/chair sensor	11%	10%
CO2 detector	3%	3%
Passive Infrared Movement Detector	33%	32%
Flood Detector	23%	19%
Pullcord	28%	27%
Falls Detector	41%	37%
Door exit sensor	1%	0%

The development of the pilot scheme in each district reflected the local context in terms of membership of the local planning group, method of recruitment, monitoring centre used and response mode, and in particular they varied in the extent to which they had to develop special arrangements for response, or could rely more on routine services. In some cases satisfactory agreements could not be reached with a potential partner and alternative arrangements had to be made. For example, in Mid Kent the housing department of the district council had its own monitoring centre and it would have made sense to use this for Telecare. However at the time of the negotiations the service was being reorganised and did not have the capacity to take on the Telecare work so an alternative contract was negotiated with a national provider who supplied Telecare equipment and could also provide a call service.

In all the sites the implementation group included the Team Leader of Care Management and a representative of the company providing the monitoring centre service but other members of the team varied, especially in terms of the type of agency which was providing the main response service. For example in East Kent a local Housing organisation was involved in response, in Mid Kent it was a local care agency, Housing and the rapid response nursing service, and in West Kent it was the

local monitoring centre. All of the services received referrals from care management teams but in West Kent and in East Kent the company providing the call service was also involved in making referrals. The Directorate also appointed three Project Officers to promote Telecare, support staff to make referrals, and support the assessment process, and also involved the engineers from the companies installing the equipment (see Table 3).

Table 3: The structure of Telecare in the three pilot sites

	i. West Kent	**ii. Mid Kent**	**iii. East Kent**
Planning	Membership at Local Implementation Groups – Local Monitoring Centre provider, Community Response Team, Community OT, Team Leader Care Management.	Membership at Local Implementation Groups – National Monitoring Centre provider, Team Leader Care Management, OT, Community Response Team, Housing Response team, Rapid Response	Membership at Local Implementation Groups – Local Monitoring Centre provider, Team Leader Care Management, Housing Response (Out of Hours Response), Direct Service Unit.
Recruitment	Referrals from: Care Management, OT, Monitoring Centre, Housing Support Officers. Assessment conducted by: Telecare Officer (MC) & Project Officer	Referrals from: Care Management, OT. Assessment conducted by: Project Officer, OT, Monitoring Centre Engineer.	Referrals from: Monitoring Centre Engineer, Care Management, OT. Assessment conducted by: Monitoring Centre Engineer; OT, Project Officer.
Monitoring centre	Local Provider	National Provider	Local Provider
Response mechanism	Contacts (formal/informal); Monitoring Centre	Contacts (formal/informal); Community Response Team, Housing Response team, Rapid Response	Contacts (formal/informal); Direct Service Unit (daytime); Housing Ass. (Out of Hours)

Issues with care management In all of the pilots there was initially a problem with referrals. This related to lack of engagement from mainstream services. The Telecare projects were heavily dependent on care managers and occupational

therapists (OTs) for appropriate referrals, however some care managers and OTs were not actively involved or interested in Telecare. It appeared that these members of staff did not understand Telecare, were not confident in their ability to promote it or were concerned that it would add to their workload. A Project Officer described this response in the following way:

> I think right at the beginning I don't think care managers were enthusiastic about Telecare or it probably wasn't that, it was probably they were so busy doing all their other jobs they thought 'Christ, I've got something else to ask people when we go and visit them', but I think they are starting now to see the benefits (Interview, Project Officer).

While the relationship with care managers seemed to have developed well in Mid Kent, in East and West Kent there were difficulties. For example, one of the Project Officers felt care management had made heavy weather of assessment and when asked about any impediments to implementation replied that there were delays as a result of care management teams handing over referrals to the local OT and Project Officer, rather than assuming responsibilities themselves.

In West Kent a member of staff at the monitoring centre described the situation as follows:

> I still don't think we've got care [managers] on side, I still don't think we've got support…I think we've had difficulties finding clients from them, we've had to orchestrate most of the referrals because care managers aren't fully on side, some are, some aren't, [one of the care managers] has been very much on side and without her I think we would have struggled, so I think it is a big learning curve for everybody but also we need to move people forward with Telecare as well, you've got to get people signed up, involved and on side, and I think there is still a lot of work to do there (Interview, Monitoring Centre Staff).

Demonstration Units To develop local understanding of and familiarity with the technology two out of the three Social Services districts set up demonstration units, either a house or flat fitted out with the equipment. In the West Kent district, the Monitoring Centre provider set up their own demonstration flat. These units were designed to show how the equipment actually worked in a domestic setting. The Local Steering Groups invited local care mangers, OTs and members of the response teams to visit the units. Despite evidence that care managers and others

had little knowledge of the technology some members of the Telecare team felt there was a poor response to their invitations. A senior member of the monitoring centre in West Kent saw poor attendance as an indication of lack of interest:

> The people involved in the project have signed up to it but does that filter all the way down through the care teams? Are they all aware of what Telecare can do? Are they all signed up to it? Are they actively thinking of it? How many have been to our stay home? Not many, despite the fact they have had offers and invitations to go there (Interview, Monitoring Centre Staff).

Such statements tend to reflect the early stages of implementation and the numbers of visitors increased in the later stages especially in the units run by KCC in Mid and East Kent. There had been delays in setting up some of these units and this appears to have impacted on their utility. For example, a Social Services professional involved in assessment in East Kent described the situation in the following way:

> For some reason in [East Kent] there's been a bit of an issue with the SMART house, and I think there's been concerns that it hasn't been available for people to go and view, that's only really come online for the past 4 or 5 months. If it had been more available to go and view at the beginning that would have been better, and I think people would have had a better understanding of it. [The monitoring centre] did invite care managers and actually gave a couple of talks, but unfortunately they weren't terribly well supported (Interview, Social Services professional).

Care managers felt they had little opportunity to find out about Telecare before it started, due to the pressures from within KCC to get the pilots up and running. While there were training sessions these did not occur until the project had started and care managers did not feel they had the opportunity to attend:

> Well I think we had all been told to do referrals but I think the way forward would have been to include everybody in an 'awayday' like that. And I think that was bad practice…We need to attend those days for it to mean something, I think it is alright saying 'here is a brochure, this is Telecare' (Interview, Social Services professional).

Project Officers As the pilot project could not get enough referrals from mainstream services, three Project Officers were appointed to speed up the assessment process, complete reviews and help promote the project. This was successful in bringing the numbers up. The Project Officers organised referrals, and liaised with Monitoring Centre staff and the engineers to arrange assessments and installations. However

there was a risk that the involvement of the Project Officers as intermediaries may have further reduced the direct involvement of mainstream care management and OT teams in the implementation of Telecare, with some staff feeling that they now had 'one less thing to do'. Many seemed to welcome this extra support. On the other hand, because the Project Officers and the Care Managers had different roles and were both heavily committed to their own activities it was easy for some tension to develop:

> When you are in two different camps and both are very busy and you are going on a joint assessment…I think we need to encourage better dialogue than there was before I was on board, that was the only source of friction, we don't want that to creep back in (Interview, Project Officer).

Even where relationships seemed to develop well as in Mid Kent, one of the Project Officers was not sure that the Care Managers would welcome the mainstreaming of the pilot project:

> Care Managers in the Mid-Kent area have not been resistant at all. They've been very, very positive and very, very supportive. How they're going to feel about me when I hand it back to them I don't know (Interview, Project Officer).

Problems with local ownership One of the major difficulties was caused by a perception of top-downward decision making, i.e. that the pilots were imposed on local services. There was no significant difference between the responses of staff from both the commissioning and providing organisations. For example a senior member of the monitoring centre described the lack of local ownership in the following way:

> I think you've got to get ownership of the whole thing from everybody. It's the same with what we're trying to do here, there is no point me having ownership going round telling everyone it is a great idea, because unless I've got my installation, monitoring and response teams supporting it and understand it there is no point, everybody has got to be working towards it because all of them can be taking that call and they have to understand it. The thoughts behind it, the processes behind it, what we are trying to do, why we are doing it, if that isn't there…we've all wasted our time. And that is part of the thing of how we broaden the knowledge and information and win people over to use Telecare as an effective solution because I suspect there is still resistance and hostility to the principles of Telecare from some of the professionals out there (Interview, Monitoring Centre Staff).

Comment

The development of Telecare within Kent Social Services was often seen as a top-down development. The initial interest and decision to implement Telecare within the Service came from key Members and senior managers who acted as product champions. They were enthused about the potential ways in which Telecare could contribute to the achievement of key service strategies, especially by enhancing independent living amongst vulnerable adult service users. They saw the pilots as a way of learning more about Telecare, and especially as a means of identifying problems that needed to be resolved so that Telecare could be rolled out across the Directorate and become part of the mainstream services offered by Social Services.

3.   USAGE OF TELECARE IN THE PILOT SITES

In this section we consider evidence on the operation of Telecare. We start with evidence from the monitoring centres and then consider evidence from a sample of users.

3.1   Monitoring Centre Evidence

As part of their contract each of the monitoring centres was required to maintain records of all Telecare calls and to supply this information regularly to Kent Social Services. The monitoring centres logged each call and provided basic information on how each call had been treated and provided feedback. Given the inevitable monthly fluctuations of calls, we have aggregated the calls over three month periods so that the general pattern is clearer. The monitoring centres varied in the ways in which they classified both calls and the action which they had taken so we discuss both the overall trends and the data from each centre.

In *West Kent*, the monitoring centre logged nearly 4000 calls over a period of 17 months, and noted the action taken in just over 1000 cases. As would be expected, in terms of overall calls there was an upward trend with less than 100 a month between August and October 2004 rising to over 350 a month in May to July 2005, before falling back to approximately 300 a month in November to December 2005. Underlying the overall rise in the number of calls were variations in the reasons for the calls reflecting the ways in which the service developed. Initially in August to October 2004 most of the calls were either false alarms and testing (79 per cent) and only a small minority client emergencies (5 per cent) or providing reassurance and information (16 percent). The proportion of false alarms and testing dropped over time (in October to December 2004, 45 per cent) while the proportion of client emergencies has grown (in October to December 2004, 20 per cent), as has the provision of information and reassurance (32 per cent) (see Table 4). False alarms and testing can be seen as 'noise' in the system which could obscure the real purpose of the system to deal with emergencies and to provide clients and carers with information and reassurance. Therefore this underlying pattern indicates that as clients get more familiar with and learn to use the equipment more effectively, the system is also operating more effectively (See Table 4).

Table 4: West Kent – Call Reasons

Call Reason	Aug-Oct 04	Nov 04- Jan 05	Feb-Apr 05	May-Jul 05	Aug-Oct 05	Nov-Dec 05	Total
Client Emergency / Alert	13	34	97	187	172	121	**624**
Information	45	35	79	163	188	193	**703**
Testing	49	134	206	340	291	119	**1139**
False Alarm	168	75	230	425	383	155	**1436**
Other	0	0	13	4	7	7	**31**
Total	**275**	**278**	**625**	**1119**	**1041**	**595**	**3933**

The *Mid Kent* monitoring centre adopted a rather different way of classifying calls, over a period of 12 months. It appears from comparing the data for 'call reason' with the data on action taken that the centre excludes false alarms from the data on calls received although false alarms are included in the data on 'call action' (see Tables 5 and 6). Furthermore while there has been an increase in the number of calls in Mid Kent and a rise in client emergencies, the increase is not as marked as in West Kent. In addition, it is difficult to explain the high number of other calls in the July to September 2005 period. It would appear that the level of noise (false alarms and testing) in the Mid Kent system was somewhat lower (24 per cent of calls) than that recorded in West Kent (65 per cent of calls). However without more detailed information on the calls, it is difficult to understand precisely what this difference signifies.

Table 5: Mid Kent– Call Reasons

Call Reason	Jan-Mar 05	Apr-Jun 05	Jul-Sep 05	Oct-Dec 05	Total
Client Emergency	964	989	1084	973	**4010**
Reassurance	0	1	0	0	**1**
Testing	186	41	49	64	**340**
Others	2	20	1275	98	**1395**
Total	**1152**	**1051**	**2408**	**1135**	**5746**

Table 6: Mid Kent – Call Actions

Call Action	Total
False Alarm	**1187**
Testing / Programming	**877**
Information / No Action Necessary	**3765**
Client Emergency / Action Taken	**2242**
Others	**382**
Total	**8453**

The *East Kent* monitoring centre reported the lowest number of calls over an 18 month period, 2198 compared to 3933 for the West Kent monitoring centre and 8543 (12 months) for the Mid Kent centre. It is not clear if the East Kent centre excluded false alarms and test calls. The overall trend was for an increase in calls with 112 in July to September 2004 and 739 in October to December 2005 (see Table 7). The East Kent centre provided a detailed breakdown of the type of alarm which had triggered a call and the nature of the response. It is clear that clients using either the integral button or manual trigger initiated most of the calls. There were some automated calls especially from fire and smoke alarms, flood and fall detectors and some calls resulted from equipment failures such as low batteries. In the overwhelming majority of cases (89 per cent) the monitoring centre records indicate that no action was considered necessary (see Table 8). If and when action was considered necessary then the monitoring centre requested assistance from the named contact. In a very small number of cases the monitoring centre contacted the emergency services.

Table 7: East Kent – Call Events

Alarm Type	July-Sep 04	Oct-Dec 04	Jan-Mar 05	Apr-Jun 05	Jul-Sep 05	Oct-Dec 05	TOTAL
Alarm Call Failed	0	0	0	5	6	19	30
Auto Battery Low	0	0	8	5	10	99	122
Auxiliary Input	7	16	0	2	0	0	25
Bed	0	0	0	3	29	40	72
Bogus Caller	0	0	2	0	1	0	3
Client Wandered	0	0	0	7	0	15	22
CO detected	0	0	0	1	0	0	1
Fall Detector	6	3	4	7	25	28	73
Fire Alarm/Smoke Detector	24	33	41	40	162	67	367
Flood Detector	4	15	13	26	9	11	78
Gas	0	0	0	0	0	2	2
Info - Fault	1	0	0	0	1	4	6
Integral Button	6	22	30	62	199	155	474
Intruder Alarm	35	40	25	38	59	80	277
Mains Failure	1	33	18	7	35	23	117
Manual Trigger	28	65	66	121	42	195	517
Silent Panic Alarm - Hall	0	0	1	0	0	0	1
Temp Extreme	0	0	1	3	6	1	11
TOTAL	112	227	209	327	584	739	2198

Table 8: East Kent – Call Action

CALL ACTIONS	July-Sep 04	Oct-Dec 04	Jan-Mar 05	Apr-Jun 05	Jul-Sep 05	Oct-Dec 05	TOTAL
No Action Necessary	110	206	182	245	545	675	**1963**
Reassurance Given	0	0	0	1	0	0	**1**
Contact Called	2	20	25	74	37	63	**221**
Keysafe Access	0	0	2	0	0	0	**2**
Next of Kin Called	0	0	0	1	1	0	**2**
Keyholder Called	0	0	0	2	1	1	**4**
Ambulance Called	0	0	0	3	0	0	**3**
Police Called	0	0	0	1	0	0	**1**
Fire Brigade Called	0	1	0	0	0	0	**1**
TOTAL	**112**	**227**	**209**	**327**	**584**	**739**	**2198**

3.2 Individual users

While aggregate figures give some indication of the overall ways in which the service was used, it is difficult to see how individual users accessed it and the impact it had on their lives. The monitoring centres recorded the name of individual users so it was possible to monitor the ways in which different users accessed the service. Since there were nearly 300 users, it was not possible to present individual data for all the users. Instead we have selected four case studies representing different types of users, whose names have been replaced with pseudonyms to ensure anonymity. The first user we consider we refer to as Mrs Yardley. She had a wide range of equipment installed but did not use it very actively, making most use of the passive elements of the system. Her equipment possibly delayed her admission to residential accommodation for some months. The second user we refer to as Mr Montague. Initially he had difficulties in using his equipment effectively but over time he learnt to use it effectively and it helped him live more independently. These two cases are also those that have had a high number of false alarms which have slowly reduced over time. The last two case studies were both couples, Mr. and Mrs. Underwood used it a great deal while Mr. and Mrs. Thorne have used it more sparingly but to great effect.

Case Study 1: Mrs. Yardley

Mrs. Yardley was a 90 year-old woman who lived by herself in a relatively isolated location. She suffered from dementia and had fallen several times. She was receiving support from a formal care agency. She was considered to be a vulnerable client and was provided with a wide range of equipment including a lifeline base unit and

pendants, flood, smoke and temperature extreme detectors and bogus caller and intruder alarm in January 2005. It was also evident that she could no longer work her gas appliances and a gas detector was also installed. In the first three-month period her alarms were activated approximately ten times a week. A quarter of the calls were false alarms or testing. The monitoring centre operators decided following a check that no further action was necessary for approximately two thirds of calls and in less than 10 per cent of cases the monitoring centre alerted a contact, both a nominated Keyholder and the contracted mobile response agency, indicating that there was a problem (see Table 9). In the following two months the levels of calls fell to approximately five per week and the monitoring centre operators decided following a check that no further action was necessary for all of these calls. The reduction in the level of activity was actually an indicator that Mrs. Yardley's physical and mental condition was deteriorating and she was no longer safe living at home. At the end of May 2005 she was placed in residential care.

Table 9: Mrs. Yardley's call history
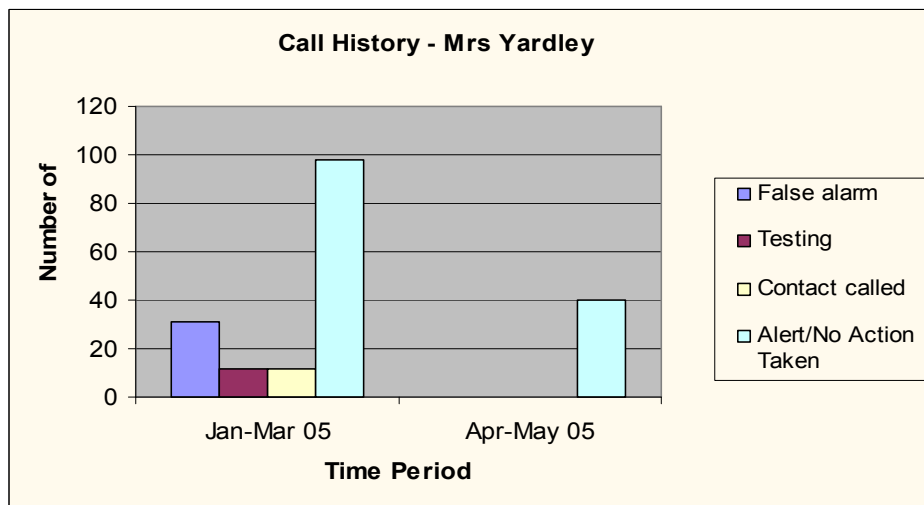
Case Study 2: Mr. Montague

Mr. Montague was a 47 year-old man who had experienced serious epileptic fits over a long period of time which had affected his mental capacity especially his short-term memory. His epilepsy was managed by medication but this left him drowsy. He was relatively socially isolated spending most of his days alone. His habits meant that he was also at risk of a fire, as he was a heavy smoker and had on several occasions fallen asleep with a lit cigarette. He received support from both health and social care.

In November 2004 a Telecare package including lifeline base unit and pendant, smoke detector and falls detector was installed. For the first 9 months his alarm went off approximately three times a week. Most of these calls were false alarms though on occasion the monitoring centre operator did provide reassurance or call his named contact, a carer from a care agency, and alerted the emergency services twice (see Table 10). However over time he appeared to get more familiar with the equipment and more confident, and as this happened, the overall level of calls fell to less than one a week, representing a fall both in the levels of false alarms and of client emergency calls.

Table 10: Mr. Montague's call history
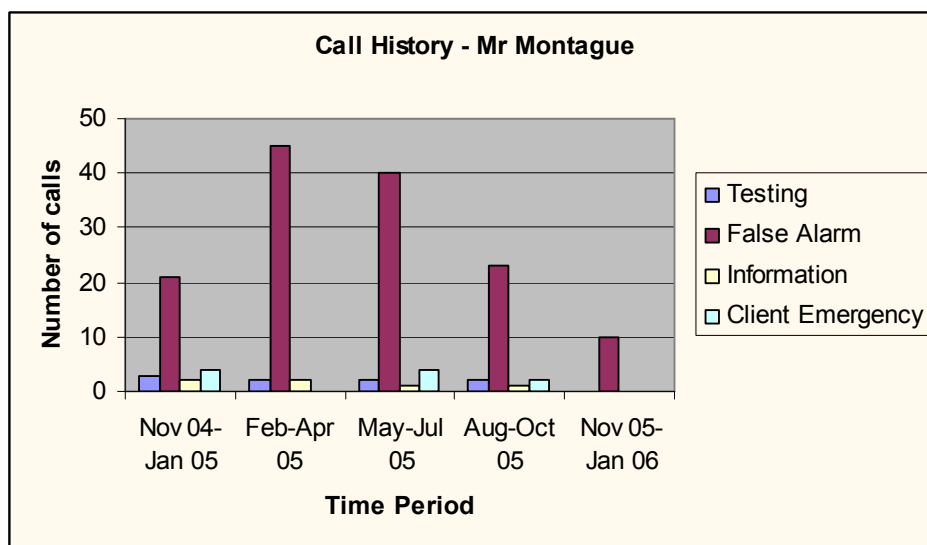
Mr Montague felt that he had benefited from Telecare as it had enabled him to move from shared supported housing to a single tenancy where he could live more independently. When we interviewed him he told us, 'I used to live in a shared tenancy – this is much better' and felt that this had contributed to his general well-being, 'I feel more independent when I am going around'. Mr Montague had had a bad accident but as he had been wearing his falls alarm the rapid response minimised the consequences of his fall:

> I had a really bad accident when I fell and broke my nose and fingers. Just outside on the pathway. The falls alarm went off immediately, the ambulance was with me in 20 minutes.

### Case Study 3: Mr. and Mrs. Underwood

Mr. and Mrs. Underwood were an elderly couple who were both 66 years-old and both suffered from health problems. Mr. Underwood had arthritis in his hip and spine and was deaf in his left ear. Mrs. Underwood had emphysema, poor circulation and limited mobility. She also 'suffered with her nerves'. She was on medication for her circulation and for her 'nerves'.

Following their retirement they had moved into their current bungalow, and had spent money improving it. They had been receiving some social care support prior to Telecare, a housing support worker visited them once a fortnight and they had a Lifeline system. The local police officer suggested they should have Telecare following a burglary. Mrs. Underwood described it in the following way:

> The burglar alarm was fitted in February this year because at the end of January we were burgled, we were sitting in here and I heard the bedroom door shut, he was in my bedroom...the local police officer came round, apparently we were the fifth in two hours. It did make me very ill and he [the police officer] was worried. He came every day to make sure we were OK, he was here one day when the support worker was, he spoke to her, and from there on...Because he [Mr Underwood] was going into hospital to have his knee done [knee replacement], it was rushed through for me so that he knew I was going to be OK.

In February 2005, a Telecare system was fitted in the Underwood's bungalow. It included a lifeline unit and pendant, bogus caller alarm, Passive Infra Red movement detector and smoke detector. Mr. and Mrs. Underwood's system was activated less than once a week and nearly half the calls were actually test calls (see Table 11).

Table 11: Mr. and Mrs. Underwood's call history
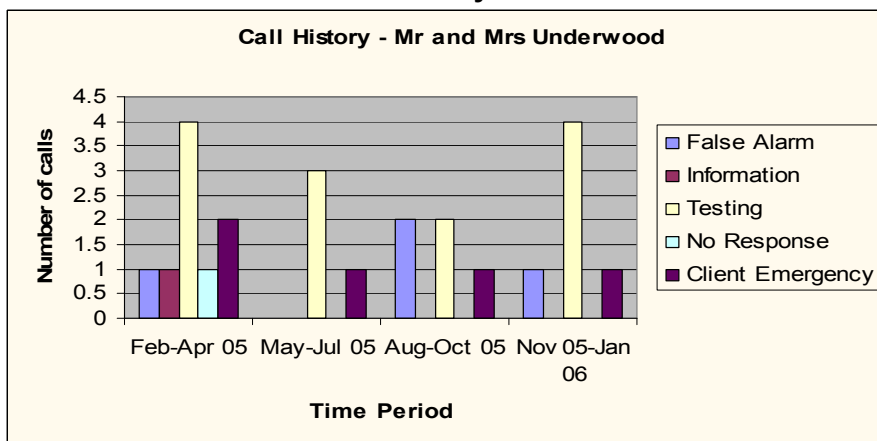
The Underwood's had on occasion accidentally triggered the system and Mrs. Underwood described her feelings about this in the following way:

> *Interviewer*: Do you worry about setting it off?
> *Mrs Underwood*: It makes you feel a bit guilty, because there could be an important call by somebody else…You know it's there for an emergency, an accidental push is not an emergency is it?

The Underwood's had used the system to deal with a medical emergency and found that it worked very well:

> *Mrs Underwood*: I couldn't breathe properly; she spoke to me and said she could hear me fighting for my breath. She said they would call an ambulance, they were talking and then the motorbike paramedic arrived.

However, the main benefit of having the system was that it provided them with a sense of security, especially following their burglary:

> *Interviewer:* Has it enabled you to stay living where you are?
> *Mrs Underwood:* Yes, at first, after the burglary, we've never been burgled, and like I say it made me really ill, and if they'd have offered me somewhere else I'd have gone, but we'd just made this a home and we were getting it how we wanted, we'd put a new kitchen and porch on it, you know, why should I run away now? That's how I feel.
> *Interviewer:* So instead of feeling like you have to run away, putting in all the sensors has made you feel...
> *Mrs Underwood:* Yes, more at ease…The advantages are that it makes us feel safer. I know that if my husband has gone out for some reason, if I'm taken ill I know there's someone I can talk to…All the family know that we've got it, and they're all pleased that we've got something here, and they're well satisfied with what we've got and what's been done for us.
> *Interviewer:* Has it enabled you to live your life differently?
> *Mrs Underwood:* Well, we can go out now, just put the burglar alarm on and know we're safe.
> *Mr Underwood:* We can live normal knowing that we've got the security in the house.

The Underwood's were so pleased with the system they had even recommended it to a friend who subsequently had it fitted.

Case Study 4: Mr. and Mrs. Thorne

Mr. and Mrs. Thorne were an elderly couple who were experiencing health problems. Mr. Thorne was 88 years-old and was an insulin dependent diabetic. He had survived a

stroke but it had left him with short-term memory problems. Mrs. Thorne was 90 years-old, and although she also had health problems, poor vision and had recently recovered from pneumonia, she provided support and care for her husband; for example, she managed his insulin injections. They had already made some adjustments to their lives before the installation of Telecare - they had moved from their house to a more manageable flat and they received a care package with carers coming in once a day to bath Mr Thorne. They had a son who supported them but he did not live close by so they were dependent on support services during an emergency.

In April 2005 they received a Telecare package which included a lifeline base unit, bogus caller button and smoke detector. Their system was only rarely activated. In the first three month period there were 6 test calls, in the following three month period two false alarms and in the third three month period, four calls. In response to one alarm, the call operator provided information and in response to the other three alerted the emergency services (see Table 12). Mrs. Thorne described the emergencies in the following way:

> I also had to ring it when my husband had his hypo, I found him in the morning flaked out on the bed, and he lay there and I had to get help quickly…I had an incident last week when I used it, I accidentally gave him too much insulin, it was a stupid thing to do but it happened and I got straight on the lifeline and said 'What do I do, I need help, the doctor's surgeries are shut at weekends' and they got me an emergency doctor to ring me back and they were very very good, I can't fault them, and she rang back and explained it wasn't a problem, so that put my mind at rest. But I wouldn't have known what to do otherwise, I was panicked by it….They were excellent, when I found him I rung them and they talked me all through it, what to do, talked to me the whole time, they got the ambulance and told me my son was on his way, they couldn't have been more helpful.

Mrs. Thorne appreciated the service she had received. In particular she felt that the monitoring centre operators had been calm and responsive which had reassured her and helped her to deal with the emergency:

> They're not just a voice, they are a caring voice which is what you need, and they calmed me down...they've got a lovely caring way.

Table 12: Mr. and Mrs. Thorne's call history
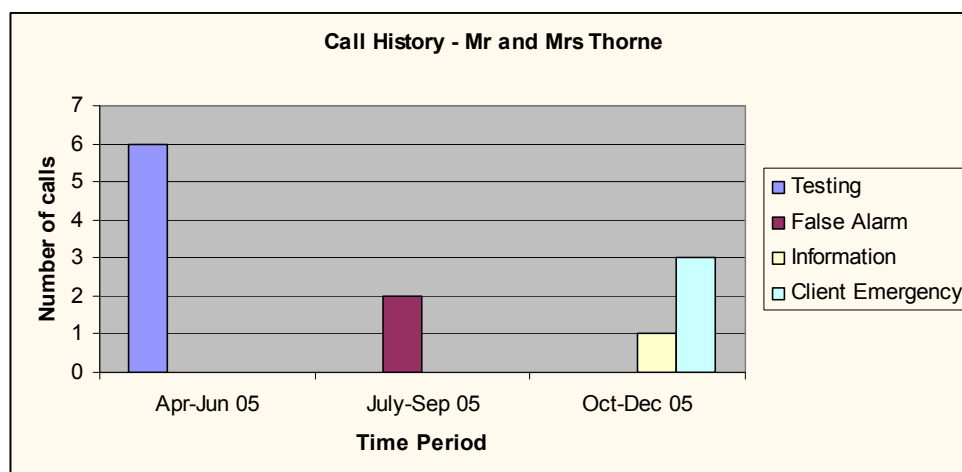
Mrs. Thorne clearly felt that Telecare helped her deal with the various challenges of her life and this contributed to her independent life:

> *Mrs Thorne:* The thing is somebody is there when you need them, that is the main thing... because my son lives far away, he gets here but not immediately…I couldn't manage without it [Telecare], and I wouldn't want to be without it.
> *Interviewer:* Does Telecare enable you to live differently and be more independent?
> *Mrs Thorne:* I can go out and leave my husband with that on and know he is all right, he can at least press that [the alarm] and get help. I used to arrange people to come because I was worried but now I don't.

Comment

It is difficult to get a clear picture from the monitoring centre data on exactly how the service is being used. This partially reflects variations in the data being recorded. Given that the rate and number of Telecare installations in each pilot is similar, one would expect similar usage levels. It is therefore difficult to explain why the East Kent centre recorded just over 2000 calls with the West Kent monitoring centre recoding nearly twice as many and the Mid Kent centre recording four times as many, unless the centres managed their information in a different way.

While the trend of calls in each centre is similar with a rise in the overall number of calls and a rise in the action taken, there are differences. There is some evidence of learning within the system, especially in the West Kent centre, as over time, the number of false alarms and testing fell as a proportion of calls, with more attention being paid to taking action or reassuring clients. While such trends are also evident in the data from other

monitoring centres, the trends are not as evident. These inconsistencies indicate that the monitoring centres are using different criteria and approaches to recording the nature of calls and the action taken. If this is the case, the data has little value for auditing and monitoring the service provided. If Kent Social Services intend to use such data to monitor the delivery of the service then it is important that in future they provide clear guidelines about the type of data the monitoring centres should record and the format such records should take.

The monitoring centre data was also used to examine the ways in which individual users access Telecare. False alarms and test calls do create noise in the system which may make it more difficult to concentrate on the calls requiring reassurance and/or action. The level of false alarms in our four cases varied. In the case of Mrs. Yardley and Mr. Montague there was a high level of both calls and false alarms. In the case of Mrs. Yardley these may have indicated that she was finding it difficult to cope with the equipment and the decline in the level of calls over time may have been a precursor to her admission to residential care. It is not clear whether Telecare delayed her admission; the reduction in the level of calls may have drawn attention to her situation and stimulated action. In the case of Mr. Montague there was a very different outcome. Over time he learnt to use the system more effectively and when he did have a medical emergency the system worked well, ensuring a rapid response so that the harm he suffered was minimised. In Mr. and Mrs. Underwood's and Mr. and Mrs. Thorne's cases both the level of calls and false alarms was far lower. They learnt to use the system quickly and effectively. For both couples the system provided support for independent living. Both couples had used the system to summon help in a medical emergency. However, both couples felt that the psychological effects of Telecare were crucially important. It provided them with a sense of security and helped build and sustain their confidence so that they felt better able to deal with the challenges of independent living.

In this section we have looked at the overall use of the Telecare as well as how four groups of users accessed Telecare. In the next section we will draw on a survey of users and carers to examine whether others shared these experiences.

4. USER AND CARER PERCEPTIONS OF TELECARE

In this section we consider user and carer perceptions of Telecare, how they accessed the service, and how Telecare has addressed their needs, going on to look at their perceptions of the benefits of Telecare to them (for information on methodology see Appendix 1).

4.1 Entry into scheme

Information on Telecare

Users recalled a number of different routes into the Telecare scheme (see Table 13). Most users were made aware of Telecare through Social Services.

Table 13: How users entered the Telecare pilot
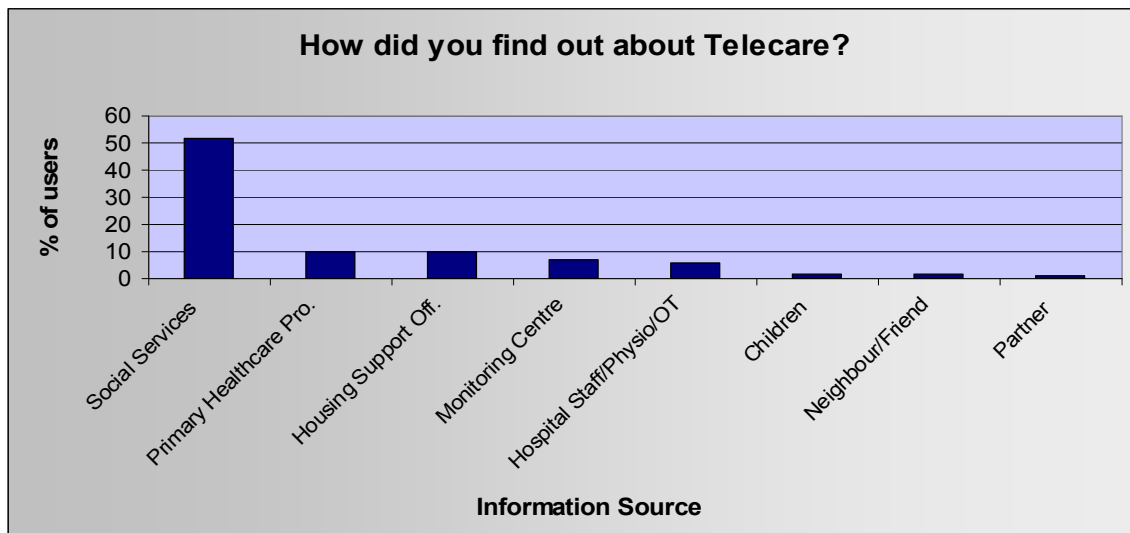
Other routes included children, OTs, or local user and carer support groups. The carers were also asked how the person they cared for became aware of Telecare and more than two thirds had become aware through Social Services. Others were through Housing Support Workers, wardens or primary healthcare professionals.
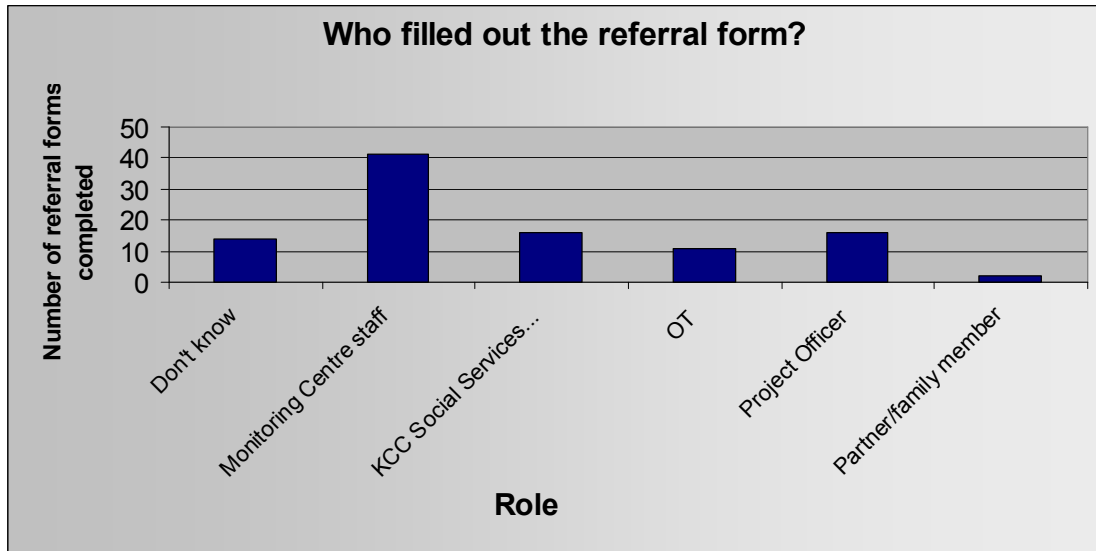
Decision-making

Just over a third of users felt they had not played an active role in the decision to install the Telecare devices. These users tended to name Social Services professionals or one of the monitoring centre staff as the key decision makers. A smaller minority did not know or could not remember who had completed the referral form (see Table 14). Generally they recalled the Telecare team playing a key role, though in some cases

Social Services or their family completed the form. Only one user remembered having completed it for themselves.

Table 14: Showing referral form completers

Over a third of carers felt they had been involved in the decision-making though less felt the person they cared for had been actively involved in the decision to acquire the devices. Three quarters of carers felt the person they cared for had had no input.

The interviewers asked users if they had been referred into the scheme for any specific problems such as for their health, housing, safety or security. A fifth of users and carers saw health as a major factor in suitability for Telecare. For example, factors identified included increasing frailty, or vulnerability following an operation. However almost half of carers felt that safety was a major issue; for example, users who suffered from forgetfulness and posed a danger to themselves, as in the case of this user who had memory problems following a stroke and four Transient Ischemic Attacks (mini-strokes):

> My memory has not been so good, I would put the cooker on and forget about it, smell burning, I'd think 'somebody is burning something', and then see the smoke, the pan was all burnt… (User, Female, Mid Kent).

Nearly a fifth of users felt vulnerable because they had a propensity to fall. One carer with a number of health problems described her husband in the following way:

He has had a knee operation, it has gone wrong again, it gives way quite a bit. I know now that I have only got to press the buzzer, for if he was on the floor and had hurt himself, there is no way I could pick him up (Carer, Female, West Kent).

For many of the other participants a combination of health, safety and security needs made them appropriate candidates for inclusion. Security concerns could be related to previous break-ins, neighbourhood harassment, or perceived security threats, and this could lead to health problems, as this user reported:

I'd had a lot of trouble down here, my housing support officer said they'd like to put one in here to help me, because I was getting really stressed out, worrying if anybody was going to break in…We had trouble with people trying to break in and the damage that was being done, it was not very good for my health really. I'm more or less housebound (User, Female, West Kent).

User and carer perceptions of health and wellbeing

Users were aware of health and social care needs and almost half reported two or more of those factors as the reasons for entry to the pilot in each site. The interviewers explored users current health needs. Nearly two third of the users stated that they had a health problem; with half of the users identifying at least three separate medical conditions. The nature and severity of the reported conditions varied, from 'old age' and 'having a pacemaker' to life threatening illnesses such as leukaemia and emphysema. The most common reported medical problems were diabetes and high blood pressure with a tenth of the users identifying these conditions. Almost a fifth of users also identified mental health related problems, Alzheimer's and Parkinson's for example, as well as depression. In addition the users identified a range of disabilities, the most common was restricted mobility due to arthritis or osteoporosis and nearly a tenth used a wheelchair part or all of the time. As was anticipated, most of the users in the study did not see themselves as healthy or mobile and most had to rely on others to provide help and support.

Carers acknowledged both the dependency and potential isolation of the person they were supporting (see Table 15). Carers felt that the person they were supporting had problems with a number of activities needed to support independent living, especially shopping and housework, but most carers also identified problems with collecting prescriptions and getting pensions. Carers were concerned about social isolation and nearly half the carers identified fear of crime, fear of falling and loneliness as significant

issues for the person they cared for. A minority of carers also expressed concerns about lack of information regarding benefits and services.

Table 15: Showing what carers consider to be a problem for [the person they care for]
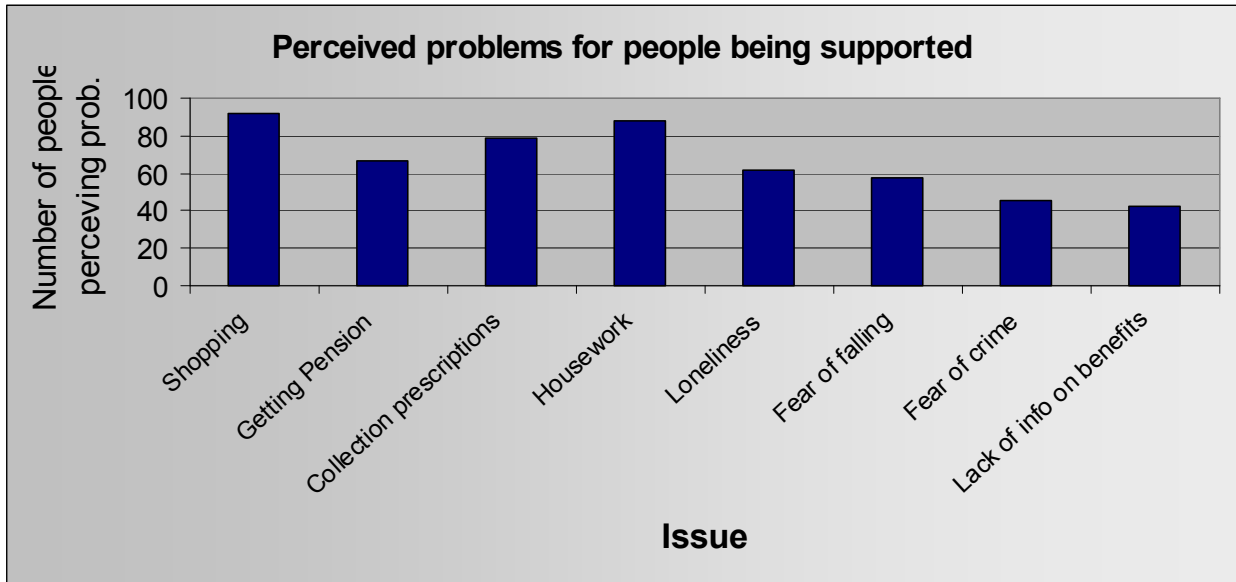
It was clear from the carer interviews that they felt there should be a package of services to which the provision of Telecare was linked, and integrated with other services such as advice on benefits.

4.3 Perceived benefits of Telecare

Users and carers were asked what they considered to be the benefits of Telecare. The main emphasis was on the psychological benefits of Telecare and the ways in which it provided a defence against anxiety. Thus most users felt that Telecare provided 'peace of mind', 'increased confidence' and 'reassurance' because if they needed help they could summon it quickly and easily, as this user describes:

> I think its peace of mind *if* something goes wrong. When you feel vulnerable it's nice to know in the back of your mind that if you press a button there is going to be someone here, and you haven't got a problem, that facility is there (User, Female, West Kent).

Some users talked about feeling 'more relaxed', 'more independent', and 'safer' with the Telecare. Some users and carers felt that Telecare had improved people's health by reducing the number of falls and averting a move to or stay in hospital, as in the following extracts from carer interviews:

It has improved her safety, she has had fewer falls because of the system. I honestly think if we hadn't had the system she'd be in hospital. I would say it's become invaluable, from her own point of view…I am alerted very quickly now, particularly with the pager, that there is a problem and so I'm in quickly and therefore it's cut down the number of falls, there's no doubt about that. Certainly since we've had the one with the wheelchair it's cut down the falls (Carer, Male, East Kent).

The other thing it also does is it makes them more independent…And I think your health improves, my dad has certainly fallen over less times since he had it than before he had it (Carer, Female, West Kent).

Some carers also commented on the benefits for them, enabling them to have more freedom, reduced anxieties, and having 'peace of mind' that something is there, especially in informal caring arrangements. It also made help more 'accessible', with one carer commenting on the importance of having a '24 hour backup system', and 'reassurance that there is a way of contacting somebody if something happens, like if she falls over':

It enables mum to feel safe when I'm not here, when I am out, it means I don't have to be constantly worried (Carer, Female, Mid Kent).

Some users and carers felt that Telecare was a major improvement on previous 'alarm systems' as the system did not depend on complex wiring and was therefore less visible and intrusive in the home environment:

One of the main advantages is that it is wireless, so you haven't got thousands of wires all over the house, and it is small (Carer, Female, Mid Kent).

Furthermore Telecare can be activated automatically as the sensors and triggers can be positioned around the dwelling or on the person. The user does not have to use the phone to contact someone in case of an emergency, as one user stated:

The main benefit is in being able to alert someone when I've fallen without having to stumble around or worry about being near a phone, because I can't always get to one if I have had an attack, I can't move, getting to a phone is virtually impossible (User, Female, Mid Kent).

Living arrangements and moving intentions

Users were asked about their living arrangements and intentions to move prior to the installation of Telecare, and currently with the Telecare in place. In response, a fifth of users said that they had considered moving from their home before the Telecare was

installed, either because of their own increasing frailty, their awareness of family concern that they were not able to cope at home alone, or perceived security concerns. Of those who had considered moving, most had considered a move to a more manageable bungalow, some nearer to family and friends, and others into supported/sheltered housing or residential care.

Following the introduction of Telecare, only one third of those who had considered moving were still considering it. Interviews with carers confirmed these trends. A small minority of carers said that the person they cared for had considered moving prior to Telecare, and this was reduced following the installation of Telecare.

Users felt that Telecare had helped them to remain in their own home. Over three quarters of users stated that they felt the Telecare had enabled them to stay living where they were; the remaining users said it had not, because they would have continued living there regardless or did not know. Most users were committed to staying in their own homes, some commenting that the only way they would leave their home would be 'in a box':

> I don't want to go into a home, I want to stay in my own home if I can possibly manage it (User, Female, Mid Kent).

> He was absolutely adamant that he didn't want to go in a home...I work full-time and so does my husband so that is why he is still able to remain independent here (Carer, Female, Mid Kent).

Even though Telecare may not prevent a move into care or hospital, it can serve to defer the move or even the decision to make the move, as this user explained:

> It is important for us as well because we will have to look perhaps at moving into a bungalow but this has given us that extra bit of time before we have to make that choice, we don't really want to sell this place (User, Female, Mid Kent).

Amongst carers there was less agreement about the role of Telecare in helping people to stay in their own homes. While two thirds of carers felt that Telecare had helped the person they cared for stay in their own home, a minority of carers did not feel it had contributed either because the person had already moved prior to the Telecare installation, or because Telecare formed part of an overall package of care and, in their

view, it was this overall package rather than just the Telecare component which played the key role.

Interviewers invited users to comment on Telecare, using 16 attitude statements. Five of these statements were relevant to user perceptions of the impact of Telecare on their lives and their living arrangements (see Table 16). The overwhelming majority of users felt that Telecare had enabled them to live more independently, and nearly all attributed this to increased confidence in the safety and security of their home environment. Most agreed that their home environment had improved, and there was little evidence that Telecare devices had increased their sense of anxiety and vulnerability.

**Table 16: User perceptions of the impact of Telecare on life and living arrangements**

Statement	Agree	Disagree	Not Sure	Not Applicable	Did Not Answer
I feel much safer with the Telecare devices in my home	93	0	1	0	6
I feel much more secure in my home since the Telecare was fitted	87	2	4	0	7
I can live more independently now that I have the Telecare devices	84	4	6	0	6
My home environment has improved since having the Telecare devices installed	72	11	9	0	8
Having the Telecare devices makes me feel more vulnerable	8	79	4	0	9

Impact of Telecare on care provision

We invited both groups to comment on those aspects of life which they felt were most important for users as a way of exploring their personal values. They were provided with a list of 10 options and invited to select the top four priorities. There was strong agreement between users and carers with both groups placing emphasis on staying at home, being safe and social inclusion. The top priority for users was 'remaining in your own home', which links to findings in the recent Audit Commission (2004) reports and other social care policies, and having 'safety/security' at home. Carers had similar priorities. All carers identified 'remaining in own home' as a top priority and a majority also identified 'safety/security' as being important. A majority of users and carers identified 'privacy' as a priority. Only a minority of users identified 'socialising' and 'neighbour support' while a majority of carers identified 'family visits' and

'friend/neighbour visits' as a priority. A clear difference between users and carers related to family support; a majority of carers felt it was a top priority, compared to only half of users (see Table 17).

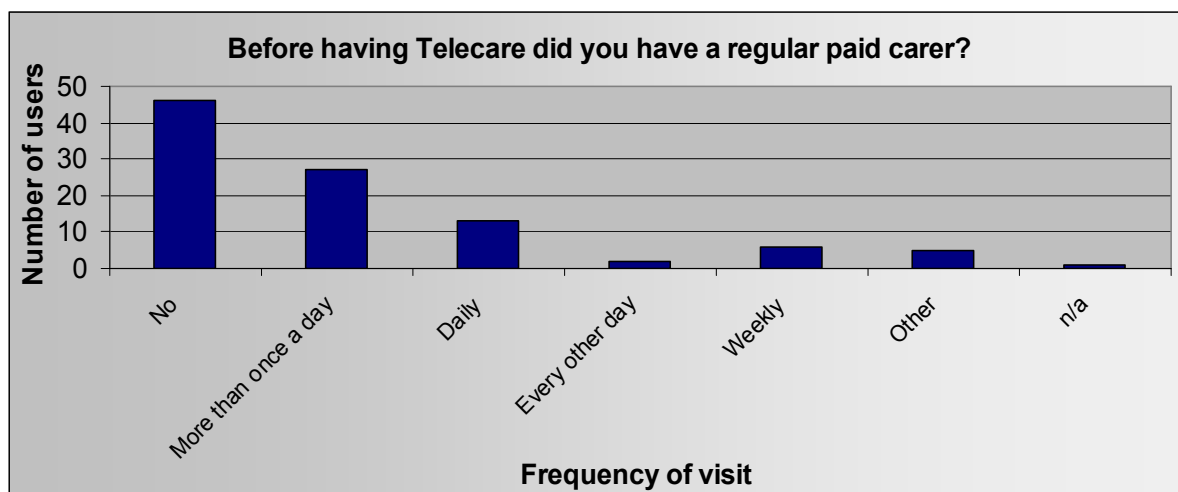**Table 17: Showing aspects users and carers considered most important**
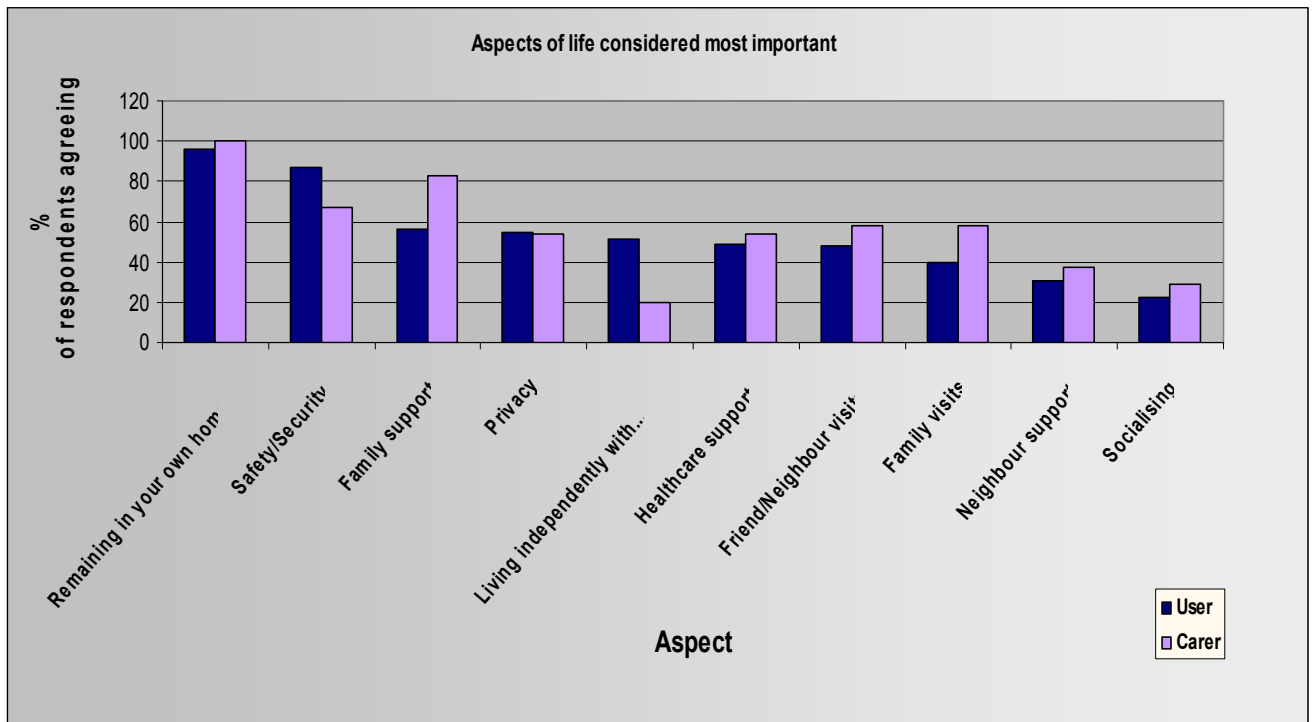
Users were asked about caring arrangements before and after getting Telecare, to assess its impact on informal and formal services. Generally users reported little change as a result of Telecare. Only one user indicated that his informal carer no longer called on a regular basis. However some users did indicate that Telecare actually gave them more 'space', since their relatives did not feel they had to check up on them all the time in case something had gone wrong:

> I'm not being checked on every five minutes which is quite nice. It's given me a bit more privacy, I don't have to justify myself every time I don't answer a text or phone call...If they text me and I don't feel like texting back, if I am tired or something, they know that I might be sleeping, but if I don't answer within a couple of hours they start to get worried and they will text again and call. I can sometimes sleep and wake up to 6 texts and 3 missed calls (User, Female, Mid Kent).

Just over half of users had regular paid carers before the Telecare was installed, whose frequency of visits are demonstrated in Table 18 below.

Table 18: Showing frequency of visits of paid carers

Before having Telecare did you have a regular paid carer?

A bar chart with "Number of users" on the y-axis (0 to 50) and "Frequency of visit" on the x-axis. The categories and approximate values are: No (46), More than once a day (27), Daily (13), Every other day (2), Weekly (6), Other (5), n/a (1).

Other care services who visited regularly included home help, home nurses and meals on wheels. The number of users with regular paid carers increased marginally following the introduction of Telecare, with an additional six individuals receiving care services more than once a day. It is difficult to explain why the use of paid carers increased. This may reflect the general tendency for vulnerable adults to receive increased support over time. Without a control group it is difficult to establish whether Telecare has somehow increased demand for support or whether it has played a role in reducing the speed at which increased support is required. It more than likely reflects the nature of the client group, and increasing vulnerabilities in areas that Telecare cannot support in itself, for example, personal care. The majority of other regular informal visitors included family, friends, and neighbours, emphasising the importance of additional informal support networks.

One of the objectives of Telecare was to support carers by providing them with additional support mechanisms. Carers were invited to comment on whether there had been any changes in their caring role since the Telecare devices were fitted. Almost a third of carers indicated that Telecare had provided them with assistance which had supported their caring role. There was no evidence that Telecare had increased the pressure on carers, in terms of an increase in the level of personal care needed. However many carers found caring difficult and socially isolating and criticised the general lack of support for carers, as illustrated in the following extract:

> I feel isolated as a carer, very isolated, because although all these things are in place, you need someone to talk to or someone just to come around so you can say 'she's done this or that'… (Carer, Male, East Kent).

For those carers who did not perceive any change in their caring responsibilities following the installation of Telecare, more joint working with Social Services and the formal response services would have been of value in order to distribute the care burden more equitably. Another opportunity to support carers could have been exploited by adapting the schedules of key contacts so that the informal carer was not always placed as the first contact for response. This could have provided carers with some form of respite from their caring role.

Carers were also asked if there had been a change in their personal relationship with the person they cared for. Just over a tenth reported a change. One carer described some increased strain in the relationship since Telecare had been installed, mostly because he had been called to attend to the person he cared for several times unnecessarily for false alarms due to the user and monitoring centre being unable to communicate and then co-ordinate response correctly:

> At times it has been very strained yes. When you come out two or three times in a week and she's just sitting there saying 'Hello'…I have just leapt out of bed, got dressed, had to get the car started, come all this way over here and what do I find? [She is] just sitting on the commode, the alarm has just gone off and [she] hasn't cancelled it. So it is a bit of a tricky situation, for most people it would be a wonderful thing, but with [her] not being able to cancel it before anybody got here, because they couldn't hear her to understand what the problem was (Carer, Male, Mid Kent).

Impact on users' quality of life

In their response to the attitude statements, a majority of users agreed with the statement that Telecare enabled them to live more independently. However only half of the users responded when asked a similar question in the interview. Of these, just over a third stated that they felt more independent, for example, in terms of being able to remain living at home, being able to undertake activities which they may not have felt confident enough to do previously without the Telecare, and of being generally less reliant on other people:

> Yes most definitely. It means I didn't have to move in with my parents or my daughter, simple as that (User, Female, East Kent).

One young woman who suffered regular epileptic fits had young children. Prior to the installation of Telecare the family were in danger of having to be separated, but Telecare enabled them to carry on living as a family:

> It's helped me and it's helped the children. Before I had the Telecare there was a lot of pressure on my children (User, Female, West Kent).

A minority of users did not feel the Telecare service, in itself, had enabled them to live more independently. This was because Telecare did not achieve this on its own, but that it had enabled them, as part of their care package, to improve their quality of life.

The interviewers asked users whether Telecare had enabled them to make changes in the ways they lived. A third of users indicated that Telecare had facilitated change. Those users who felt Telecare had enabled them to make a change indicated that it gave them the confidence to live more independently:

> I know that my house will be safe when I go out, because I was a prisoner before but I'm not now. My daughter can take me out in the week, I know we can go out now and we know that we can come back and the house will be alright and things like that…I mean, we couldn't even have our windows open because they were trying to break in (User, Female, West Kent).

> I couldn't have a bath or cook or hoover upstairs without Telecare (for fear of a fit and falling) (User, Female, West Kent).

> Living on my own it gives me the confidence to move about in the bungalow and if I do fall I know I can get assistance (User, Male, East Kent).

Those users who did not use Telecare to facilitate a change felt that it supported their current independence:

> It has not necessarily helped me to live my life differently, it has helped my family and friends to not be so on edge about me all the time, not to worry so much because they know that something is there in place...When I go out I activate the alarm, I'm happy I'm still here, I feel confident that I can go home…I've got a home to go to. It's enabled me to go out and socialise and go to work and everything, with confidence coming back that I've still got my home (User, Female, Mid Kent).

Impact on carer quality of life

Carers generally felt that Telecare had had a positive effect on their lives. In particular carers commented on the ways in which Telecare reduced their levels of anxiety. For some users Telecare provided a general reassurance, as in the case of this gentleman who was the main carer for his wife, who suffered from vascular dementia and was prone to falling from her bed and wheelchair:

> I would say that it has helped to improve it, it's helped give me a bit more confidence in doing a few things around the house, it was getting to a point where I wasn't doing anything. Now it has made a difference yes, a significant difference (Carer, Male, East Kent).

This carer in particular felt that Telecare meant that he no longer had to provide close and constant supervision for his wife, and therefore he did not have to stay in the same room as her all the time, but could engage in activities in other parts of the house:

> I would say the biggest change is that it's made it easier for me to prepare meals and to perhaps do a few odd jobs outside of the room, I can do it with more ease, I know that the alarm will go and the pager in particular has been fantastic…All of these things are making a fantastic difference. It means at the moment that I can actually go out and attempt to cook a meal, and do a few things like that, whereas before it was getting to the point where I couldn't go out of the room because my wife needed me all the time, now when I go out I know that I'll be alerted the minute that she tries to get out of the chair (Carer, Male, East Kent).

In some cases carers felt confident enough to leave the person they were caring for alone. For example, a daughter who was supporting her father who suffered from heart problems, diabetes and was prone to falling, and her mother who looked after him felt that she could take her mother out of the house, as her father could use the alarm system if he was alone and needed help:

> I can take mum to have her eye test, because she has to go to hospital, and we know, although dad is here, originally we used to try and make sure someone else was here, but now we don't have to do that because we know he can just press the button. And when dad is in hospital we know that mum can press the button, so it has a two-way advantage. I think the advantage is that someone can be on their own, and you're not on your own with one of those buttons (Carer, Female, West Kent).

Comment

In the interviews both users and carers were positive about the service provided by

Telecare. The overwhelming majority of users (96 per cent) and carers (79 per cent) agreed that the Telecare service provided users with support 24 hours a day, every day of the year, helping them to live safely and more independently.

4.4   Experience of Telecare use

Ease of use and learning to use the devices

Almost all users and carers found the devices easy to operate. Some users initially found the devices a bit confusing. For example, one commented:

> It takes some time to learn about these little knobs and things, at first I got really confused, but I am alright now (User, Female, West Kent).

While others had learnt, some still did not know how to cancel a call that had been triggered by accident or for no obvious reason, which could lead to unnecessary action being requested, as this carer explained:

> *Interviewer:* Are they easy to stop?
> *Carer:* No, because if you did it by accident you invariably don't know you've done it. And when he [person I care for] did do it by accident he was upstairs in bed and although he's got a phone by his bed, he came down here to answer this one. By which time the man at the other end had given up and phoned me...you know, it was 1 o clock in the morning, and it was disorientating. I live an hour away...it wasn't until after he'd rung that I realised what had possibly happened because he hadn't answered, the time he'd gotten down here to answer it. And when I rung back they had called (user) and he was still here downstairs...(Carer, Male, East Kent).

Just over three quarters of users recollected receiving instructions on how to use their system and most found these instructions easy to understand, though a small minority of users found them difficult. Some users did not find the user guide helpful but did get advice on how to use the system from the engineer during installation and found this more helpful:

> I don't think they're the most user-friendly instructions I've ever read, no. But the engineer is very good, he explains it (Carer, Male, East Kent).

Some clients also admitted that they had not read the instructions given to them. Instruction in a variety of formats might educate the user and help them feel more confident with the equipment. This increased confidence might help reduce the number of calls generated in error.

4.4 Acceptability of the systems

In the interviews we explored the acceptability of equipment, especially the devices which users carry on their person, such as pendant alarms and fall detectors. Some studies (for example, Peeters, 2000) have explored older people's acceptance of products. Peeters pointed to the stigmatising effect of social alarm systems. In our study we found little evidence of stigma; generally users were happy to wear alarms and did not feel embarrassed by wearing either a pendant or a fall detector (see Table 19). However there seemed to be some problems with fall detectors. Although only a minority of users had fall detectors, nearly a third of these individuals found them uncomfortable and did not like wearing them.

Table 19: User perceptions of the acceptability of Telecare equipment

Statement	Agree	Disagree	Not Sure	Not Applicable	Did Not Answer
I do not mind wearing the personal alarm (pendant trigger)	74	10	0	8	8
The personal alarm (pendant trigger) is uncomfortable to wear	10	64	6	10	10
I feel embarrassed when people see me wearing a personal alarm	7	67	5	14	7
I don't like wearing the fall detector	13	15	4	61	7
The fall detector is uncomfortable to wear	12	15	4	60	9
I feel embarrassed when somebody sees me wearing the fall detector	4	24	4	60	8

Even though users found the pendant alarm acceptable and relatively comfortable, this did not necessarily convert into actual usage. Just over half said that they 'always' wear their pendant. A minority of users said that they wore their pendant 'most of the time' or 'sometimes'. Of concern were those who indicated 'never'. The users who did not wear their pendants indicated that they did not find them comfortable:

> I can't get on with it, it feels like I'm strangling myself when I have got it round my neck, I don't like nothing round my neck (User, Female, Mid Kent).

The falls detector seemed to cause the most difficulties. Twelve users mentioned problems they had with either the device itself or the pouch it is carried in, as this user explained:

Yes, the only one that didn't [feel comfortable] was that one (fall detector), it fits on to a belt, I tended to try using it on my trousers, but it is a bit bulky and awkward. Women's trousers don't usually have belts, it is easily clipped onto a belt but it was very uncomfortable (User, Female, Mid Kent).

Other devices

The interviewers also asked users if there were any devices that they thought would be useful to them but which they did not have. A small minority indicated that they would have liked additional devices. Some of these were available through the Kent Social Services pilot, such as falls detectors and bed sensors, and others were not provided at the time, such as medication dispensers and reminders, or security cameras for the exterior of the property.

The term 'flood' detector caused some confusion amongst potential clients of Telecare, believing it to refer to external flooding. Therefore several people thought it would not be relevant to them because they had not experienced flooding in the area, or they lived at the top of a hill so perceived no threat of a flood:

They did offer me a flood system and all that, but I don't think I need that…not up here we are on high ground! (User, Female, East Kent).

The interviewers also asked users if there were any devices which they had not accepted and approximately one third of users indicated that they had declined devices, often bed sensors and falls detectors.

Device usage

Interviewers asked users about their use of the systems (see Table 20). The most commonly used device reported was the Lifeline base unit, followed by the smoke detector, the fall detector and the Amie Trigger. There was little evidence that users had used some of the devices offered by the Kent County Council service, i.e. the CO_2 detector (no reported use), the temperature extremes detector, the pullcord and the bogus caller alarm.

Table 20: Showing self reported device usage for users
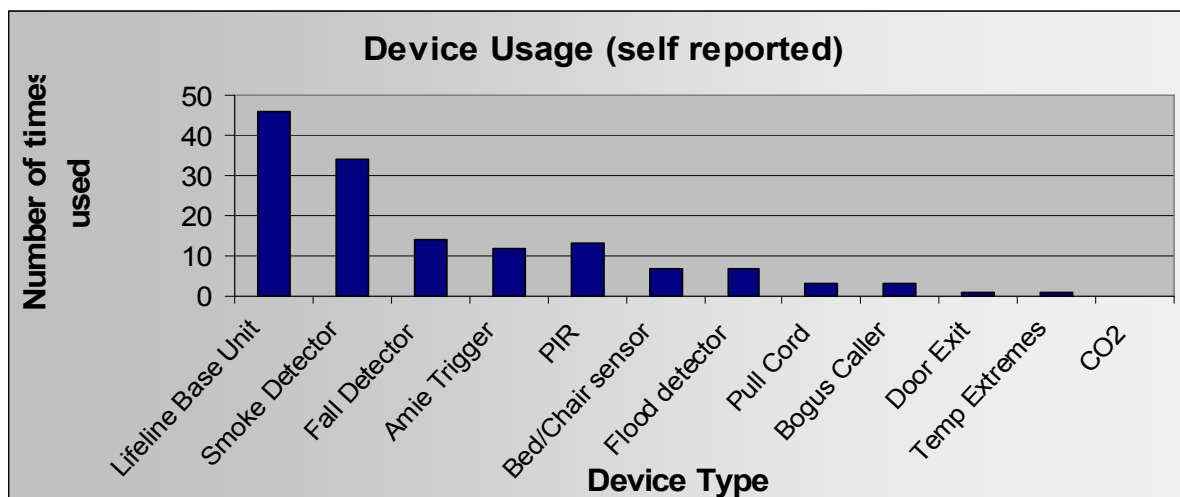
We did invite users to comment on whether the alarms had gone off accidentally or if there had been a reason for their use. Users found it difficult to be precise about this, as some of the sensors are automatically triggered; however, some respondents were able to identify cases in which the system was used to summon help. For example, one user accessed emergency help though her alarm:

> It saved my life because I was here by myself when I was ill, if I hadn't have had that I don't know what would have happened (User, Female, West Kent).

In some cases the user was not able to use the alarm him or herself to summon immediate help, but a family member was able to use it following an emergency. In the following example, the user was home alone and had fallen. A family member had been to visit and had used the Lifeline unit to raise an alert to the monitoring centre, who were able to contact the appropriate emergency service:

> On a Saturday morning, dad fell over, he was on the floor in the other room which was freezing, my son came round because I was out, so my son came round and he said 'What do you normally do granddad?' and he said 'Well you could press the button, and you get someone here', he said 'I do want someone here to check you over, because I'm not going to move you, you don't know whether you've done anything to your spine', so really, that is why it's right, if you have got an injury, you're going to get the right services here to make sure your carers don't do any damage to you (Carer, Female, West Kent).

Most of the users had experience of false alarms and the problems that such false alarms could create:

It tends to go off a lot when it hasn't been triggered by me or anything, the bed alarm has gone off several times and I haven't even been here. An alarm went off yesterday, and they rung me to see if I was OK, they very often do that...my friends have been called in the middle of the night, because I may not have been here but the alarms have gone off (User, Female, Mid Kent).

Once it was about 2 o'clock in the morning the intruder alarms battery had gone low on it, and they rung me up, I was like 'could you not ring me in the morning?'... Because it makes you panic, you think 'What's happened?' (User, Female, Mid Kent).

In some case there was a specific problem which was causing the false alarm but the system could not be adjusted to deal with this. For example, the following respondent seems to have lived in an area which was prone to power cuts:

I find the system excellent except when there's a powercut. When there's a powercut and they keep calling you and you keep answering them, 'cos obviously the batteries cut in, we've had, I suppose since it's been installed 3 powercuts, every occasion we have said to the people at the other end 'it is a powercut can you record it as a powercut so we don't keep…' but they keep ringing don't they? All the time, that is quite disconcerting…the first one is always a recorded message, and then after that the lady keeps saying 'you're coming up on my system, are you alright?' and we say 'yes, it's a powercut'. We've done that loads of times, other than that the system is brilliant. It is brilliant because it works (User, Male, West Kent).

Approximately one third of users and a minority of carers were worried about accidentally activating the devices, concerned about being a nuisance or about obstructing the line for real emergencies:

I feel awful about it...I remember the story of the little boy who cried wolf too often... (User, Female, Mid Kent).

However users who had accidentally set off alarms generally found that the operator at the monitoring centre was only concerned to find out that they were alright and tended to be reassuring and sympathetic. As one carer noted:

It's very comforting, they're very nice (Carer, Male, East Kent).

It is important to note that false alarms could actually boost users' confidence by demonstrating that the system really did work. As one user said, following an accidental call:

I feel if it was for real I know there would be somebody at the end of the line (User, Male, West Kent).

Response to alarm calls

The interviewers asked the users about the response to alarm calls. The majority of respondents indicated that the monitoring centres usually tried to contact them by calling or via their intercom and that if the centre was unable to contact them to check on their welfare, then the monitoring centre contacted the nominated contact for mobile response. As a last resort the centre contacted the emergency services.

Most of the users were 'absolutely happy' with the ways in which the monitoring centre responded to calls and felt the operators were patient, had the ability to calm people down in tense situations and provide support in emergencies. Users described the operators in the following way:

> I haven't been left thinking 'What do I do now?' they have always done their part of the job. They are all very nice, very patient (User, Female, Mid Kent).

Users appreciated the help they received during emergencies. One related the monitoring centre's actions in two emergency situations:

> They were excellent, when I found him I rung them and they talked me all through it, what to do, talked to me the whole time. They got the ambulance and told me my son was on his way, they couldn't have been more helpful (User whose husband had fallen).

> About four or five months ago I fell out of bed and my things were out here, I thought 'how am I going to get up now?' because once I'm down I can't get up, so I just pressed the button, they asked me what I wanted, I said 'Please get my son, I have fallen out of bed' and he was down here within 15 minutes (User, Female, East Kent).

Users appreciated the speed of response particularly when they felt under personal threat, as in the following incidents:

> Two chaps broke in here and they was trashing my house looking for money...I was laying on the bed and they burst through the front door, they kicked a hole in the front door, then they kicked a hole in the next door to get in my bedroom, and then they started threatening me, and turned the place looking for money...but as soon as I pressed that button, I couldn't get there at first because they were in my way but as soon as I got to that button and pressed it the police were here within minutes (User, Female, East Kent).

> They have been a godsend to me, because when they smashed my windows, they've done it twice, as soon as I press my button the lady will say 'sit there, we'll get the police, don't go to the door whatever you do, don't do nothing', the police were here within ten minutes, and the lady came back and talked to me until the police arrived. I rung through the next day because I was so pleased (User, Female, West Kent).

Some respondents did experience problems with the monitoring centre, however, often relating to problems with communication with the monitoring centre or with information records being out of date. In the following example, a carer had requested that the monitoring centre check back on the person he cared for twice if an alert was ever raised, and they did not always do so, instead calling him immediately if there was no response from the user. In addition, he spent a period of time in hospital and requested that his and another friend's details be removed as the named contacts, with calls to be directed to the warden instead. However, he found that the monitoring centre continued to contact them both, despite this request:

> I must admit it took them a long time, they kept phoning me up and I said, 'make sure you phone [her] twice', it took them a long time to get that. I would say to them 'Did you ring twice?' they would say 'Actually no', it is a job for them to get the instructions. And when I was in hospital my number shouldn't have been called, they were still calling my number…And I was in hospital and a friend of mine got phone calls when I had asked them to take that number off too, so obviously they don't always adjust the screen as they need to at the other end, you might request it but whether it gets taken off or not is a different thing. So people were getting disturbed, I had a very irate person keep getting in touch with me saying 'they phoned me again, got me out of bed!' and it was a bit annoying (Carer, Male, East Kent).

4.6 Charging issues

Kent County Council decided that users on the pilot would not have to pay for the services they received. However, when Telecare is rolled out as a mainstream service, a charge for all new service users will need to be introduced. We therefore wanted to explore whether the introduction of charge would be likely to act as a barrier to uptake in the future. Interviewers asked users if they would have installed the equipment had there been a charge. Over half of users said they would and a quarter said they would not mainly because of their concerns about affordability. Users were asked how much they thought was a reasonable amount to pay for the Telecare service. A few individuals were apprehensive about answering these questions, as they feared that

they would then be asked to pay for the service if they stated an amount they would be willing to pay (see Table 21 for all answers).

Table 21: Showing what users consider a reasonable amount for the Telecare service.
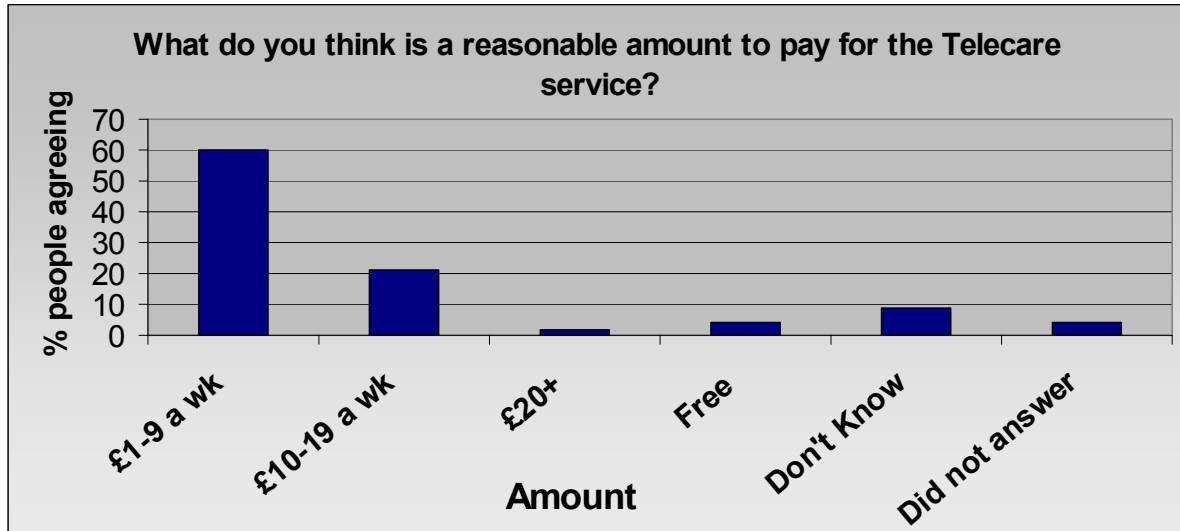
Users were then presented with a hypothetical scenario, the premise being that Kent County Council would be introducing a charge of between £10 and £20 for all new users, in order to establish whether or not they would find it acceptable. For that scenario just over half of respondents indicated that they would want the equipment at this price, since, in their view, they needed it, though many expressed serious reservations. Approximately one third of users felt that it would be a substantial sum for those on low incomes. Most people believed that the charge should be based on the individual's ability to pay. One user commented:

> I think if you've got someone on a very low, just living on a pension, and you've got someone who is quite well off who can afford to pay that bit more, then it should be varied according to circumstances (User, Female, West Kent).

Comment

User and carer perceptions of Telecare were generally very positive. Both users and carers felt that Telecare helped users live independently within the community. Insofar as users had changed their intentions about future living choices because of the installation of Telecare, this was towards living more independently, and not moving into supported living environments. While users and carers recognised that Telecare provided an important resource in emergencies they felt that its main effect was psychological, providing both users and carers with reassurance that if anything did go

wrong they could summon help. Therefore they felt that it helped them to build their own confidence in independent living. There was little evidence that Telecare increased user anxiety (despite some concerns about false alarms). There was also little evidence that Telecare reduced the level of personal care needed or provided. Indeed, there was more evidence of a rise, rather than a fall, in the levels of formal care being provided. Similarly some carers reported that Telecare had enabled them to reduce the levels of immediate support which they provided, but they appeared to use this time to undertake caring activities that had been previously difficult, such as cooking meals or shopping. Thus as with much technology in the human services, the net effect of capital investment did not seem to have been to reduce the demand for labour, rather to increase the range of services provided.

In terms of the equipment most users found the majority of devices acceptable, comfortable and useable. There were a number of problem areas, however. There were a few items that respondents either did not understand, such as flood detectors, or did not use, such as CO_2 detectors. It may be that the overall range of devices available should be kept under review and that items such as flood detectors and CO_2 detectors should only be included in exceptional circumstances. Even then, special attention should be paid to explaining why the items are being installed how they work. While users said they found pendant alarms comfortable and acceptable only about half of respondents wore them all the time. There also seemed to be difficulties with falls detectors. A substantial minority of users had them found them to be bulky and uncomfortable. Finally, users and carers experienced some problems with false alarms. Monitoring centre operators minimised the consequences of these problems by using their judgement and treating users with sensitivity so that they did not feel at fault.

5. FRONTLINE STAFF AND MANAGER PERCEPTIONS AND EXPERIENCES OF USING TELECARE

In the last section we examined user and carer perceptions of Telecare. In this section we consider frontline staff perceptions of Telecare, to see whether it is aligned both to the perceptions of key stakeholders and managers which we considered in section two and with the user and carer perceptions which we considered in the last section. There was no significant difference between the response of staff from the commissioning and providing organisations interviewed so analysis is presented for both alongside each other.

5.1. Perceptions of aims and objectives of Telecare

All the frontline staff we interviewed saw Telecare as a system designed to enhance the ability of vulnerable people to continue live independently within their own homes. For example, the following respondents emphasised independent living:

> Ensuring that people have what they need in order for them to live at home, or to continue living at home independently but with enough support to make sure they are safe and still looked after (Interview, Monitoring Centre Staff).

> Telecare as a whole is to improve the lives of people who live alone and to keep them living in their own properties rather than having to move in to care homes or nursing homes (Interview, Social Services Professional).

Respondents emphasised the ways in which Telecare could enhance independence by providing a sense of security. A member of the monitoring centre staff described the role of Telecare as helping the vulnerable user feel safe and secure in their own home, with the monitoring and response services there as 24-hour backup support.

A senior member of the monitoring centre staff framed the objective of Telecare within the broader context of demographic changes within society in the following way:

> From a Social Services perspective, [the objectives of Telecare are] to deal with the increasing elderly population, where the number of carers is decreasing and there's more elderly than there's going to be younger, and actually looking for alternatives to very expensive care provision (Interview, Monitoring Centre Staff).

This respondent elaborated on the objectives of Telecare in the following way:

[The objectives of Telecare are] to enable people to remain in their own properties where perhaps the solution previously has been to put them in care or somewhere else. Very often people are being put into care for fairly limited factors, the fact they can't cook, the fact that they may leave the gas on or whatever, so Telecare is trying to reduce people going into support. To then reduce the cost of support because the cost of support to put someone into care is much more than leaving somebody at home. To improve the quality of life for the individual because I know from experience…people would much rather remain in their own properties than being put into care. And fourthly, to give them the protection from injuring themselves or injuring others…so that if they remain in their property they're not a danger to themselves or others in the community. I see those as the four principle aims and objectives (Interview, Monitoring Centre Staff).

Thus the frontline staff agreed with both the stakeholders and users and carers that the main objective of Telecare was to enable vulnerable people to live safely, securely and confidently in their own homes.

The staff we interviewed felt that Telecare was an important part of the Social Service programme. Some staff saw this in terms of overall government policy and accessing special grants as in the following comments:

It is pretty obvious that the driving force for the employment of assistive technology is coming from the very top, namely from central government so it is obviously part of an overall plan (Interview, Project Officer).

I know the government has identified a huge grant to roll out, to make Telecare more available, it's come from, it's quite high up the decisions, and I think it's unstoppable now, that's the way it's going to go and people have to embrace that I think (Interview, Social Services professional).

Others saw it in terms of the central values of the Directorate, that of facilitating independence:

We are all about Active Living aren't we? That is what it is all about. Just promoting independence, encouraging people to remain at home (Interview, Social Services professional).

While all the staff we interviewed saw Telecare as a means of facilitating independent living, some recognised that if it achieved this it could also be cost effective and in the long term save money:

I suppose once it becomes more obvious to the carers and they understand a bit more about it, then it will be a great help because it can then assist them as

well as the elderly people, and hopefully it will save a bit of money along the way because maybe all these people won't have to go into care and be looked after (Interview, Monitoring Centre Staff).

Thus the staff we interviewed saw Telecare as a service that could help the Social Services Directorate achieve its overall objective of providing cost effective ways of enabling vulnerable people live for longer in their own homes.

5.2   Preparation for Telecare

We asked staff about their preparation and training for Telecare. A small minority of staff felt that since Kent County Council did not have a Telecare scheme that was up and running, they felt unprepared and uninformed, thus had to develop their skills while implementing the system:

> I think with all the planning in the world you are always going to find problems when you actually put something into practical use. So maybe hitting the ground running is a good approach. But it would have been nice if we'd actually seen the stuff before we tried to put it in…A little bit more would have been helpful…I think people maybe felt it was too technical and that it was an area of expertise that they didn't know anything about and therefore it was something they couldn't take on, I think that's certainly been a big barrier…I think there should have been more efforts to involve care managers from the beginning and actually educate them and go out and really sell it almost, so that's definitely been a problem...We hadn't seen the equipment. We only kind of had a visual idea of what it might be…It was kind of a description so we didn't know what it was...And because we didn't understand it or know what it was as managers we had difficulty explaining that to our staff. And then we were set targets of getting this stuff put into peoples houses and the staff didn't know what the equipment was so encouraging them to use it was really difficult because they were trying to explain something that was just this concept to them to service users and their carers. So they were getting asked really difficult questions that they couldn't answer because they didn't know…Even if it wasn't just a smart house, even if it was the kind of virtual smart house that we used at the Kent County Show to demonstrate…you know the demonstration house that we used, something like that to show staff first would make life a whole lot easier (Interview, Social Services professional).

> A lot of it is suck it and see really because it is all new equipment to us, it is not until you put it in somebody's house and see how they use it that you realise it maybe wasn't for them (Interview, Monitoring Centre Staff).

However most of the staff felt that there were a number of opportunities to prepare for the implementation of Telecare. Some of these opportunities were provided by the equipment manufacturers:

> Yes, I went up for a trip to Leeds to see the head office at [the national provider], they went through it step-by-step and it was quite interesting (Interview, Social Services professional).

> Training I've had has been from [the national provider], which is mainly product training; the other training is obviously going on visits around Scotland and talking to people who do the provision there. Some of that's been organised, some of that has been me talking to them (Interview, Monitoring Centre Staff).

Other staff had been involved in the planning process and through this had had opportunities to learn about the equipment:

> I suppose I've been in quite a privileged position because I've been involved from the beginning, from the very early discussion stages, I've been party to all the discussions about the teething problems and that kind of thing (Interview, Social Services professional).

> Because of going to the initial meetings and all the set up business [I felt] fairly well informed. I've also been to the show flat so know what the process is (Interview, Manager, Community Response Team).

One of the staff we interviewed had also been a trainer within his own organisation and discussed the programme in the following way:

> In terms of training I did a lot of training with the staff on Telecare with the response team, we've spent some time going through the different types of kit and what it did, how they would have to react to it if a call came up, what they would have to do if they were called out to a flood detector for arguments sake, how they would find the flood detector, how they would deactivate it, what sort of things could be causing that call to come through, what sorts of issues might be there, what sorts of things they'd have to do in response to that call, so we went through all the bits of kit like that. We supplemented that by doing quite a lot of training at the 'Stay Home' where I held 5 or 6 staff meetings in that location in small numbers, and then as part of that started briefing (Interview, Monitoring Centre Staff).

The staff also felt that they could access further information from a variety of sources, either from the manufacturer or staff within Social Services who were experienced with the equipment:

> It depended on the area, firstly KCC, you could go to them, there is also information on the website which I have gone into myself, but then also if that particular person had a Lifeline anyway, you could go to the company where they get that one from, so it depended on what monitoring centre they are

using so they could give them details as well (Interview, Monitoring Centre Staff).

I would either ask the Project Officer or go directly to [the local monitoring centre] (Interview, KCC Social Services Professional).

Despite the project team members concerns that staff were not adequately prepared (see section 2), the front-line staff seemed to feel that there were a variety of resources they could draw on and that they had had reasonable preparation for implementing Telecare.

5.3   Users, carers and the impact of Telecare

Staff perceptions of the users who would benefit most

The staff interviewed had different views about the users they felt were suitable for Telecare. A minority of staff felt that all Social Services clients would benefit from Telecare, and when asked who was suitable replied:

Anyone. The more needy would benefit most. For people that suffer with dementia, that sort of thing is really important, people that are prone to falls, anybody who is vulnerable and perhaps is in hospital for one reason or another, and the hospital can't let them go because they are too vulnerable to be on their own (Interview, Monitoring Centre Staff).

Everybody, I can't see a service user group who can't benefit from it in some shape or form. My caseload is a mixture of adults, elderly and younger disabled people, and I have referred in all categories and it has been successful in all categories, in fact I can't imagine why everybody hasn't got it to be honest (Interview, Social Services professional).

While these members of staff recognised that all clients could benefit, they also stressed that the equipment had gone to the 'needy' in the pilots:

I don't think we have just installed for anybody, I think a lot of thought has gone into it before we have referred, and before we have assessed so all the clients basically are needy clients (Interview, Project Officer).

There was variation in how such 'needy' clients could and should be defined. A small minority of staff felt that Telecare was suitable for the most vulnerable clients including those with dementia:

I think one group where there's a heavy benefit is people that suffer from dementia, I think there's a huge demand and need for that, the numbers of

people with dementia, Parkinson's, all sorts of things like that is increasing dramatically as people age and grow older (Interview, Monitoring Centre Staff).

However this view was not widely shared. There was the perception that some clients found it hard to adjust to the system and therefore it did not help them and was not appropriate. The difficulties could relate to the client's condition, Alzheimer's in particular was seen as causing a problem:

> I think if someone's got very advanced dementia you may ask the question 'is it suitable at all?' You've got to look at what's happened within the rest of their life and how independent they can be, so I don't think Telecare can prevent every single person from going into care, it'll never do that fully, so you've got to accept there are limitations within the product (Interview, Monitoring Centre Staff).

Staff recognised that the elements of Telecare which required client action were possibly not suitable for users with dementia but some of the other passive elements could be important:

> A lot of the people that suffer with dementia, you know full well that they are never going to press their pendant because they wouldn't remember or they would leave it somewhere and forget about it. But if you can stick in a smoke detector and stop them from burning themselves then that is that little extra help (Interview, Monitoring Centre Staff).

However staff were also aware that personal circumstances could affect the suitability and acceptability of Telecare as in the following case:

> I'd hope it would suit everybody, but I mean I had one client with a smoke detector but she couldn't get on with it so we removed it, so there are those that don't, they find them unnerving, by thinking it is the unknown (Interview, Monitoring Centre Staff).

The most common view was that clients who would benefit most were those whose independence was challenged by one or more health problems, the onset of dementia or epilepsy, for example. One member of staff described this group in the following way:

> [Telecare is suitable for] Predominantly people with that gap in their life. If they're older people and they're not able to do certain things or are at risk from the fact that they can't do or live as they had done previously…What I'm getting at is if they forget that they've left the gas on or if they fall down they may worry and they may have to physically struggle to get help or crawl to a

phone and all this business, where Telecare shortcuts that…And also younger people that I've met recently who have physical difficulties, who physically couldn't deal with an emergency easily without the equipment (Interview, Project Officer).

Telecare can also be of huge benefit to younger people, if somebody suffers from epilepsy, a fall detector could be the difference between them having a completely independent life and having a life where they're very dependent upon others (Interview, Monitoring Centre Staff).

A similar logic underlies the following descriptions of people who were considered to be suitable:

I think people with mild dementia, people who perhaps have lost their confidence, had a few falls, those who still wish to remain independent in their own home, people who want to be there, who aren't a danger to themselves or others (Interview, Social Services professional).

Staff recognised that Telecare provided a psychological prop and therefore could be suitable for people who need reassurance:

I also think it's extremely useful for people who are afraid of living alone, for whatever reason. That might be because they've had an incident with a bogus caller or it might just be because they're getting old and frail and worried (Interview, Social Services Professional).

I would say 25 per cent of my clients are between 30 and 40 and they are…I would say they also have a need but their needs are slightly different in that they're more vulnerable. They may be socially timid. They may live in areas where they feel threatened by not only the outside world but by individuals and that sort of thing (Interview, Project Officer).

There was a feeling that if the prime function of Telecare was to provide psychological reassurance then the user did not need the full package, just those elements which could be used to summon help quickly as in the following discussion:

There are about 10 people who you go into their own home and think really could just do with a Lifeline, they don't necessarily need to have a full assessment for Telecare, particularly sometimes couples who live together, because there are two of them they can still look after each other. And some of them get very worried about all the equipment, they don't like it, even if it's not doing anything or making any noise, they are still thinking 'What is that thing on my wall?' and things like that, so occasionally you do think they could have just done with a Lifeline and would be happy with that without the other equipment (Interview, Monitoring Centre Staff).

Perceptions of benefits for users

The staff members we interviewed felt that there was considerable potential both in the short term helping users deal with crises which could then feed into longer-term benefits, especially enhancing confidence and sustaining independent living:

> The constant themes or repeated benefits that came out from my interviews with service users was of the reassurance, peace of mind, and knowing that they've got help at the touch of a button, 24 hours a day, 365 days a year, and a lot of people have actually put that to the test. So overall peace of mind, reassurance, but in specific cases people have actually said to me 'this has saved my life' or 'this has saved my husband's life', and you cannot get anything that helps elderly or vulnerable people more than that, something that can save their life (Interview, Project Officer).

Some staff members discussed the immediate benefits in terms of rapid response, having a system which responded rapidly to risk and reduced the uncertainties and anxieties of living in the community:

> I think it is the security, knowing that if something untoward happens that somebody will identify the risk, raise the alarm, whether it be a fall, fire, flood, any of the sensors that they have got, somebody is aware at the onset, not when it is too late. And another thing is that it has given both my clients and their carers a lot of peace of mind. OK, you can only limit the risk, you can't eradicate it completely, and people have to make informed choices and decisions of their own, but at least there is something there (Interview, Social Services professional).

The staff members we interviewed saw the psychological reassurance provided by rapid responses to crisis as playing an important role in enabling vulnerable users to stay in their own homes and living independently within the community:

> Mainly it enables people to remain in their own homes…in previous situations without Telecare they might have had to have gone into residential care, because of safety aspects or something. So that's the main benefits to clients I suppose. There are certainly people that I've taken referrals for who have been victims of crime for example, somebody living in a very isolated cottage who's very vulnerable and who's been a victim of break-ins, I think on at least two occasions, and that's actually given her some sort of peace of mind really, so there's that benefit too, not just the safety, it's more the psychological reassurance I suppose (Interview, Social Services professional).

Criteria which staff used to judge Telecare

The staff members we interviewed judged Telecare in terms of the benefits that it provided for clients. Some of these benefits they felt were obvious and straightforward, for example, some felt that Telecare had prevented serious harm:

> It has literally saved people's lives. My colleague had a lady's house go up on fire and the alarms went off and they got her out and she was fine. It's as simple as that (Interview, Project Officer).

> Obvious ways, you don't have to be too sophisticated, if they have fallen and are lying at the bottom of the stairs with a broken hip and they have a carer or a physiotherapist that calls once every three days, they could have been lying there and conceivably been dead, that they are now smiling and saying with Telecare, 'a paramedic came to pick me up in 20 minutes'. And just from the interviews, their satisfaction levels are obvious through the interviews, I found that very reassuring actually, it brought home to me just what a good job we were doing (Interview, Project Officer).

While immediate safety and welfare was important for frontline staff, they were also sensitive to longer term issues such as independence, dignity and quality of life:

> I think first of all if they think it has benefited them, or the family think it's been a benefit, their view is probably the most important because it is not all financial, if someone has been able to retain their independence and remain in their own home for another 12 months, 18 months, 24 months. The quality of life issue is a huge thing. It is about dignity, someone's will to live, a whole host of issues, so I think I would look to the individual. You would look towards what it is doing to your policy overall, the strategic policy of supporting people, are you reducing the number of people going into care, are people staying in care for shorter periods of time, have you got a more flexible approach to the delivery of care which doesn't end up just as 'there is no other way to go, you have got to go into care'. Most people that have Lifelines are through a last resort to stay within their own properties, either by the family or the individual. But it is not enough, so I would look at it from that perspective; it is about the end user as much as anything (Interview, Monitoring Centre Staff).

Frontline staff did also note that user satisfaction was important and was an indicator that users were benefiting:

> I think if they're happy with it. If somebody is happy with it…You know, I think you can never tell what might or might not have happened. I mean there are specific examples where somebody had a fire and the smoke alarm was set off at the monitoring centre and there's some dramatic examples where people have fallen or set fire to their beds and things like that. But I think the main

criteria for judging whether it's been successful or not is if the service user is happy with it (Interview, Monitoring Centre Staff).

Perceptions of carers who would benefit

There was agreement amongst the staff we interviewed that formal or paid carers would not perceive the benefits of Telecare, indeed that they would perceive it as a threat or competition. One Project Officer put it in the following way:

> Professional carers can be a bit sceptical, they sometimes see this as a bit of a threat, they might intimate that it is a bit of a 'Big Brother' regime that we're trying to impose...I think professional carers may perceive this as a threat, that this can plug a gap, their services may be needed less because we have got Telecare. But carers who are relatives, I've had a number say to me that they can now sleep at night because they are not necessarily completely free of worry, but they worry less about their elderly relatives because they've got a system in (Interview, Project Officer).

The members of staff we interviewed did perceive informal carers, especially relatives of Telecare users as benefiting from Telecare as it provided them with reassurance and therefore reduced the need for constant supervision:

> Husbands and wives, when one is caring for the other particularly when they have to go out and leave somebody at home, if they fall it is going to be dealt with (Interview, Social Services professional).

> I think the families can benefit most definitely, they've got peace of mind that mum or dad have got strategies in place, they are not being called up on the phone every five minutes (Interview, Social Services professional).

> I suppose even family, a lot of family are involved with the people who have had Telecare and a lot of them say they feel so much better now they have the equipment in there so they don't have to keep running in there every five minutes to make sure they haven't set themselves alight (Interview, Monitoring Centre Staff).

The Telecare service is also perceived as particularly important if relatives found it difficult to provide constant care, either because they had other caring responsibilities or because they did not live close by:

> I think carers who possibly live a distance away and are worried about whoever it is that they care for. But also carers who have a lot of demands on their time from individuals because you can look at alternative resources (Interview, Monitoring Centre Staff).

I mean obviously carers who, or as I mentioned earlier perhaps someone who might be living, or have a family of their own, and are not able to go and visit somebody, they might live nearby but not near enough to be able to go in every day or haven't got the time to go in everyday, it would give them some sort of sense that their parents or mother or whoever is being supported in some way I suppose (Interview, Social Services professional).

Problems with Telecare

The interviewers asked members of staff if there were any problems with Telecare. Most found it difficult to identify any:

None whatsoever. Everybody, all of my clients who have got Telecare, everybody says the same (Interview, Project Officer).

I struggle with that. I don't think so. I don't really see any disadvantages (Interview, Project Officer).

Some did refer to problems for users, either stigma associated with some equipment, such as the pullcord in the bathroom:

The pullcord in the bathroom for example, nobody wants those, because that is a sign of infirmity, they don't want it (Interview, Monitoring Centre staff).

Others felt that it was important to install the right equipment for each user as false alarms could increase anxiety:

Oh I don't really think there are disadvantages, you just have to be careful about how you go about it…making sure you put in the right bits for the right people otherwise it causes them more worry and they panic if things do go wrong (Interview, Monitoring Centre staff).

I do have a tenant who is finding it difficult to get on with [Telecare] purely because when an alarm goes off it panics her and that is the only downside I can see, if you have someone who is very nervous (Interview, Monitoring Centre staff).

One Project Officer did mention the problem of perceived intrusion and surveillance. However this Project Officer felt that this was an issue for social workers and not for clients:

Project Officer: I mean there is a paranoia about it being 'big brother' and watching you. It's not really monitoring you as an individual. It's lifestyle monitoring. It's reacting to events, it's a passive system, you know, unfortunately an event has to happen before Telecare comes to life. You have to fall over

before we can help you. So the kind of psychology of it being part of 'big brother' is about the only disadvantage I can think of which is really not a real disadvantage at all.

Interviewer: I mean have you had many clients that have that perception?

Project Officer: No…I've only ever had that perception from social workers. There was a concern about it… I mentioned earlier would it be imposing on their jobs? Would it be something else? And it really was an old school point about well it's just monitoring… It's 'big brother', it's taking away our personal liberties. And the standard answer really is hold on a minute, are you as a social worker, as a carer, are you able to be with your client 24 hours a day, 7 days a week? No you're not, whereas this system is (Interview, Project Officer).

5.4   Impact on roles and Social Services in Kent

Perceptions of impact on professional role

The staff members involved in developing and delivering Telecare felt that it had made a difference to them in terms of providing an additional tool which could help offer their clients extra reassurance, and provided them with new knowledge and insights. In terms of services, a Housing Support Officer we interviewed commented:

> Whereas we were just going out and asking them how they were and they would say they felt very vulnerable and we would reassure them, now we can actually give them devices that will back that up and make them feel safer, so it is more job satisfaction (Interview, Monitoring Centre staff).

Since the service had its own project staff, one care manager noted the ways in which the project reduced her workload:

> I think having the Project Officer has made it very easy because you go out and you do your assessment, you think they would benefit from Telecare, you ask the Project Officer for a form, fill in the form, make the referral, the Project Officer deals with it, and that has made it very simple for us as care managers, maybe if you had to come back and think about it you would get distracted, you may not do it, it may not be so high profile, but because he is actually based here in our office you're very aware and he just takes it away from you and it is done. And it is brilliant, as a care manager everything falls back onto your shoulders, you know, finances, care packages, residential, and it is nice to know there is someone in the middle between you and [the monitoring centre] to actually gee it along and make sure it gets done, chase it up, so I think that has been very positive (Interview, Social Services professional).

These were very much minority views, a more prominent theme in front-line staff perceptions of the impact of Telecare on their job was the learning opportunities

provided by Telecare both into the needs of clients and into the potential of technology for monitoring centre and Social Services staff. One monitoring centre operator commented:

> Personally it has definitely helped me understand the whole age group that we are serving, and the nature of people living independently, with dementia, Alzheimer's, and various mental health problems than can happen. It has definitely given me a better understanding of how we can best support people overall (Interview, Monitoring Centre staff).

An OT commented on the insight it provided into new technology:

> As a qualified OT it's given me a really good background and understanding of new ways of working, new technology and everything, so I feel as if I've got quite a lot of expertise now with that, which I'm quite lucky to have got I think (Interview, Social Services professional).

Another Social Service Team Leader commented on the ways in which Telecare had facilitated innovation and service development:

> It widened what I was thinking about and what we were delivering as a service but as a Team Leader I was responsible for introducing new ideas, innovations and stuff like that in the team and the district anyway so not in the greater perspective, but it broadened up what I was able to offer the people who were coming to us for a service (Interview, Team Leader, Social Services professional).

Perceptions of impact on Social Services

The staff we talked to clearly saw Telecare as improving and changing the nature of the services they could provide for clients and as a catalyst for innovation and development. When we discussed the impact of Telecare on Kent Social Services, several of the participants felt that Telecare could benefit clients:

> Less hospital admissions. Less falls. Less wandering. Less problems. Less panicking. Less family worries (Interview, Project Officer).

However some Project Officers staff felt that while Telecare was a pilot the benefits were relatively limited:

> We are offering those benefits at the moment to a relatively small select band of people, in the three piloted districts. Now we have other districts coming on board, if it rolls out over the whole of Kent, then obviously those benefits are

magnified because it will be accessible to everybody (Interview, Project Officer).

> Should they embrace it whole heartedly it will have such a knock on effect. I think as professionals we're on the right track, embracing it as another piece of equipment or another service that will help people in whichever ways. It needs to be embraced and made more commonplace (Interview, Project Officer).

Some participants stressed the ways in which Telecare enabled the service to achieve its strategic objective of enabling more people to live independently for longer:

> I think if social care get their act together and start using Telecare as a preventative, early resource, then you will possibly keep people away from services longer. I think health will benefit if somebody does fall over in actually getting them in and doing an early intervention because if somebody falls over and fractures a femur and you don't find them for 5 or 6 hours the health implications…the cost to health might be greater than if they've got in early and treated them early (Interview, Team Leader, Social Services professional).

> Telecare has its role, it is not a panacea, it is not the answer to all things, but obviously if it can keep people living safely, independently, and from the elderly people that I have spoken to, they do not want to go into care, they want to stay in their own homes, this is a tool that helps them, enables them to do that (Interview, Monitoring Centre Staff).

One participant also felt that Telecare also facilitated the co-ordination of services:

> I think first of all it gets everyone working in a more co-ordinated fashion, I think that's the first benefit. At the moment, prior to Telecare the impression from our perspective was that it was very segmented boxes, Social Services, Health, us…Telecare can help those agencies to work together, because you are forced to work together, whether you want to or not, making it successful. So I think if it does nothing else but encourages joint working then it can't be a bad thing. Certainly it's been something that has been severely lacking, for a long time, that we don't work very well with each other (Interview, Monitoring Centre Staff).

However the most commonly expressed view was that Telecare offered a mechanism of achieving another strategic objective that of reducing the cost of providing care and support:

> I suspect in the long run if it's used more widely it could be a cheaper option than some of the care agencies having to just keep going in and checking on patients (Interview, Social Services professional).

> I think if it is used properly it could reduce care packages to some extent, in the past there have been calls where you just nip in to see if someone is OK, if

they are alright. Provided they are educated properly, they will use the service (Interview, Social Services professional).

Some frontline staff did link the two strategic objectives of enhancing independent living and reducing cost by noting that most clients preferred to live independently, it improved their quality of life and was generally cheaper than other options. So if Telecare enhanced independent living it also helped to reduce costs:

> Hopefully if it works and people are kept in their own environment then it is better for the client and it is better for Social Services because we're not putting people in residential care. So it must be economically viable, better for them, but it is what the client wants as well, people don't necessarily want to be in residential care, so I think it is the way forward, modern technology is there to be used to its best advantages (Interview, Social Services professional).

> I think it does save costs in residential care, we keep people at home because it is cheaper. But also people are happier at home, and sometimes people go into residential care and they go downhill very quickly, so it is keeping independence which is very important (Interview, Social Services professional).

5.5   Learning the lessons from the pilot

Evaluating the pilots

When we asked front-line staff to comment on the pilots, most stressed how well things had gone and how the pilots had achieved their objectives:

> The uptake has been really good. Like how our people have sort of reacted to it, especially clients and things. It's surprised them actually how good it is (Interview, Project Officer).

> Whoever devised Telecare, yes, it does what it says on the can, it enables people to live safely and independently, the whole project, at the end of the day, has it achieved what it set out to achieve, does it do what it says on the tin? And the answer is, my perception anyway when I interview the clients, the satisfaction levels are extremely high so that in itself you could say is enough, that in itself probably makes it a success…I can go further than that, in my personal case I have got clients whose lives have been saved and people are living, enjoying life very much more because they have peace of mind and that reassurance, if you couple with that relatives feeling very much better about the care, the cover that their parents have. And if we really are making some impression, albeit early days on things like hospital admissions then that really means we are achieving pretty much all we set out to do (Interview, Project Officer).

However a minority of respondents commented on the problems and glitches, such as with delays with assessments and obtaining equipment for installation, and record keeping by the monitoring centres:

> We had to spend quite a bit of time tidying this stuff up after we had been in situ for a while, tidying up the database, tidying up the call codes and all the other stuff…We changed the assessment form based on info the response team needed, for instance, so things have all been tightened up…It is working a lot better because we've had to do it, it is all very well seeing a project in Ireland or Scotland, but until you start to do it yourself, you start to apply somebody else's model to your locality, you then find what you saw elsewhere doesn't exactly fit in completely and we have had to change and adjust our own model. I don't even think we're working in the same way as the other two projects [i.e. the other two districts] (Interview, Monitoring Centre Staff).

However most participants thought that identifying and solving these problems was an important part of a pilot project as it would facilitate the 'mainstreaming' of Telecare:

> What has gone well is that we've fallen in the holes. Because a pilot by virtue is a place where you are going to make mistakes, where it is going to go wrong. And we've fallen down so many holes and we've had to get out and find a way out. So now we're in a position of rolling out to other districts…And in terms of the day to day work the referral, assessment and installation process has been ironed out and made quite easy and simple and works quite quickly and effectively where it needs to be, because you have clients out there who are at risk and if we need to have stuff in in a couple of days we can do it in a couple of days (Interview, Project Officer).

Lessons learnt

The frontline staff stressed the importance of the human component. There was a danger with Telecare that the emphasis was on the technology and that the pilots might provide 'standardised packages' that did not meet client needs. A senior member of the monitoring centre team stressed:

> Don't use packages, have a co-ordinated approach with the assessment, installation and response, you need to think of the co-ordination of that answer. Look at supply of equipment, who supplies it, who maintains it, who does the batteries etc. And the last thing is how do you get and engage professionals who have got to prescribe Telecare as a way forward and how do you get that barrier down and get them onside? (Interview, Monitoring Centre Staff).

Frontline staff noted that Telecare would not work without a properly resourced support system in place:

> I don't think Telecare is any good at all unless you sort out a support network for it (Interview, Team Leader, Social Services professional).

The human factor was important in ensuring that the needs of each client were properly assessed so that the equipment supplied was appropriate and effective:

> You need to implement it carefully and professionally right from the word go, the referrals needs to be carefully thought out, it's not just a panacea for everybody, but if you really do match up needs with equipment you can really bring some benefits into people's lives and obviously to society as a whole (Interview, Project Officer).

> The only area I think that can be the key to it working is the assessment right at the beginning, and I think if you get the assessment correct, and you have tailored it to the individual, it's about listening to the individual's needs and understanding the individual's needs, understanding the way their families are supporting them all or whoever it is supporting them, and if you get that right then the Telecare project works (Interview, Monitoring Centre Staff).

It was important to ensure that once the assessment was completed the appropriate equipment was delivered and fitted correctly, making certain that the sensors were appropriate for the particular client:

> I think they have got better at learning to tailor the sensors to the individual. Where the pilot has gone on, in time they had felt more relaxed about not feeling that they have to put every sensor into every property, I think that is what has been learned from the pilot, that the assessment is done on an individual basis by talking to as many people there available, and listening to them (Interview, Monitoring Centre Staff).

A key link in the human chain was the monitoring centre and ensuring that the operators were suitably trained and skilled in responding to calls. In two of the pilot areas some of the monitoring centre staff had not felt totally prepared for the introduction of the Telecare system and new devices into their everyday working practice. These gaps in knowledge were addressed through specific training led by more senior monitoring centre staff:

> I think the biggest learning curve is how we can best respond to each individual sensor, and what we have learned and what we have got better at in the pilot period is setting up procedures for the operators to follow in order to respond to a particular sensor, for instance, for a bogus caller or for an intruder alarm or anything like that we have tailored the individual procedures that we have on screen so the operator knows exactly what to do for every sensor. And the other thing we have learned is, operators want to be able to

reassure the person on the other end of the correct thing to do, like if there is a fire, tell them to get outside, or in some instances there may be instructions to stay put and that is what I think we have got better at, we have got better at making sure we have got the procedures to follow clearly and succinctly (Interview, Monitoring Centre Staff).

There had also been some problems with communication between the monitoring centres and local Social Services professionals and the Project Officers, relating to delays in updating individual client records and the impact this had on the action call handlers took when alarms were raised. Any incidents were highlighted and were a valuable learning experience:

> You need to remain flexible to maintain control of the system and of the project as a whole. The only 'using' problems, if there's such a word, has come from the human element, somebody writing down the wrong phone number. The weak link in the chain is the human element and we're talking about communication, bad record keeping skills, mismatch of the information and all that (Interview, Project Officer).

Thus the front-line staff saw good communication both within teams and with other agencies as crucial to the success of Telecare:

> Communication, but it isn't the communication within the company because we might communicate well in this office and we know what we're doing, but outside, people like the Project Officer didn't even know what we're talking about (Interview, Monitoring Centre Staff).

> *Interviewer:* Have you found communication to be a problem?
> *Social Services Professional:* Yes, with [monitoring centre] a bit, they seem to go in fits and starts, I think they get busy and we don't communicate and that is a problem. It may be we lose it because the Project Officer is in the middle, I don't know (Interview, Social Services professional).

Comment

Our interviews with frontline staff clearly showed that they recognised the importance and value of Telecare. They saw Telecare within the overall context of Kent Social Services as a way in which the Directorate could achieve its strategic objective of enhancing independent living in a cost effective manner. Frontline staff did recognise that the key decisions and main support for the implementation of Telecare came from the Councillors and senior managers but we did not find evidence that this coloured their perceptions of the benefits that could be derived from Telecare.

Generally frontline staff were positive about Telecare and recognised the benefits that Telecare could provide users, carers and for the Directorate. They noted that other staff had expressed some concerns about the 'Big Brother' aspects of Telecare but they themselves had no such anxieties. They also felt that they had opportunities to familiarise themselves with Telecare both through information sessions and by visiting the adapted units. If they had any concerns or wanted any information then they felt the Telecare team were approachable and helpful. While some frontline staff felt that Telecare was suitable for individuals with dementia most emphasised the capacity of Telecare to provide reassurance and a sense of security and therefore considered Telecare especially helpful in reassuring clients whose confidence had been undermined either by ill-health or by crime. Generally they felt that Telecare benefited clients but some frontline staff did express concerns about the additional pressure which carers might experience as a result of Telecare.

Frontline staff stressed the importance of getting the human components of the system right. They felt that it was important that this aspect of Telecare was adequately resourced so that users could be properly assessed and supplied with appropriate equipment, monitoring centre staff were able to deal with calls effectively and there was a support system in place to provide an effective response.

6. CONCLUSION

The positive responses of clients and their carers, when asked about their experiences of Telecare, seem to back up KCC's original view that this is an innovation which can offer real benefits for older, disabled and vulnerable people. Indeed, it is reassuring to find that most people felt that it increased their independence and that it helped them to continue living in their own homes. Importantly, these findings, especially if they can later be substantiated by a more structured evaluation of the impact of this project, would support performance targets which are top KCC priorities (helping people to stay at home, and reducing admissions to residential care for example).

Overall, one strong message from the interviews with carers was that they felt there should be a package of services to which the provision of Telecare linked to and was integrated with other support, such as advice on benefits, or information about other services available. Indeed, the intention had always been that Telecare should be fully integrated into existing services. However these comments from carers suggest that the Kent project is not yet achieving a fully integrated service. A successful Telecare service should serve as a catalyst for improved service integration. Focused around the needs of the person in their own home, with a range of response and support services available depending on their changing needs, Telecare should include a process of signposting to community services that are already available and which may then be used in a preventative mode. More work is clearly needed in Kent, to establish the right links with local services – which vary from area to area, reflecting the diversity of Kent in order to ensure that Telecare can achieve its potential in this way.

A further issue in relation to all clients is that in the experience of the people interviewed, there was little evidence that Telecare reduced the level of personal care needed or provided. Some carers reported that Telecare had enabled them to provide less immediate support but they appeared to use this time to undertake caring activities that had previously been difficult. This emphasises the point outlined in the Wanless (2006) Review, that preventative services may be just as much about improving quality of life outcomes as about making actual cost-benefit savings. Another factor may be whether the equipment being used in the current project is itself always the most appropriate to meet the needs of a broad range of people. There are also other types of

Telecare equipment on the market, not currently available within the KCC project, which may be more suitable. However, it is very difficult to draw any substantive conclusions from this review, because it was always designed to be a qualitative piece of work drawing out subjective perspectives, rather than offering any quantitative evidence of the impact of Telecare on the wider health and social care system. It is recognised that despite the barriers to achieving this, as highlighted in the Wanless (2006) Review, a rigorous, quantifiable, cost-benefit analysis of the Kent project (as with all Telecare interventions) will be required in order to understand and prove the real impact of Telecare.

There is a danger that efforts will focus on the technological aspects of the service, but it is important to recognise and assess the human element of the system. The implementation of Telecare requires appropriately qualified and experienced staff to recruit service users into the service; identification of monitoring centres that have the appropriate facilities to receive and take action on calls and maintain necessary records; and the development of an appropriate response mechanism by agreements with named contacts, informal carers or with an appropriate service. A further point, with respect to supporting carers of people with dementia, and indeed all carers, is that greater use of the formal back-up mobile response services may be needed in some cases to provide more respite for informal carers (rather than carers being the default responders in most cases).

In developing Telecare a number of factors will need to be taken into account:

- *Local ownership especially in mainstream services* - While the provision of information and demonstration units can increase interest in and awareness of an innovative service such as Telecare, without the development of local ownership innovations are likely to remain outside, even resisted by, mainstream services. Training and awareness raising events can help maintain interest and sense of ownership.
- *Importance of quality of call history data* – It seems probable that the monitoring centres are using different criteria and approaches to recording the nature of calls and the action they had taken. If this is the case the data has little value for auditing and monitoring the service provided. If Kent Social Services want to use

such data to monitor the delivery of the service then it is important they provide clear guidelines about the type of data they want recorded and the format of the recording.

- *A priority of long-term planning* will be to develop a better understanding of how the developing service will need to continue to evolve to keep pace with innovations in technology, as products become increasingly sophisticated and intelligent to particular needs. For example, it is likely that in time, Telecare and Telehealth devices will be routinely available in an integrated form (rather than being quite separate items of technology, as they currently are in the Kent experience). It will be important to maintain product champions who can support the continued prioritisation of Telecare in Kent and who can keep abreast of these developments.

- While this small scale case study evaluation has demonstrated the benefits of Telecare, it could not demonstrate the full costs and benefits. It is therefore important that KCC explores the possibility of contributing to a large scale randomised control trial. While such research is both expensive and raises ethical issues, there are a number of funding sources which could be exploited to support it.

Next Steps for Telecare Rollout in Kent

In planning for the future of Telecare services, it is important to understand Telecare in its wider context. As has been noted, its foundation is the community alarms infrastructure, which has been in existence for 30 years, and which already has thousands of customers in Kent. The basic community alarm package consists simply of a lifeline, pendant, and link to a community alarm centre. Strategically, it will be of immense benefit to the citizens of Kent if all responsible local authorities, guided by the strategic overall leadership of KCC, secure a high-level, multi-agency consensus on the future of Telecare services in the County, and a wider understanding of how services will need to change and develop in order to achieve best value for all involved, with integrated provision which meets the needs of communities. This consensus also needs to incorporate the NHS commissioners in the County, because health services and practitioners will be a key part of the wider infrastructure supporting integrated Telecare services.

Alongside other leading innovators in the UK and internationally, the spotlight is now very much on KCC to move forward in its role as a community leader, enabling the people of Kent to reap the benefits of Telecare services to support independence, wellbeing and quality of life, and to facilitate the increased integration and personalisation of all health, social care and housing services.

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1. Context

The Social Services Department of Kent County Council in association with public and private sector partners developed a Telecare programme to enhance the services it provides to vulnerable adults. The new technology was piloted in three areas (West Kent, East Kent and Mid Kent) as a precursor to full implementation across the whole County. The Social Services Department commissioned CHSS at the University of Kent to monitor and report on the implementation of the pilots.

2. The Overall Approach

The main aim of the research project was to monitor the implementation of Telecare within the pilot sites to identify the key lessons to be learnt so that such lessons can inform the full rollout of the programme across the whole Department. The main objectives of the project were to:

- Examine how the service developed and the factors which shaped its development;

- Analyse the nature, application and impact of the technology on users, carers and providers especially in terms of the experiences of service users and the outcomes of specific interventions;

- Identify the type of infrastructure that is needed to support Telecare packages and make recommendations for the development of full service from the pilot.

During the course of the project the nature of research governance in social care changed and the research team complied with new Research Governance Standards set out by Kent County Council. Ethical approval of this study was granted through the SRC Ethical Panel at the University of Kent.

3. Design

The project team considered three alternative designs for the project:

- *Randomised controlled trials* are based on experimental research and seek to evaluate the impact of a specific intervention by comparing the outcome of the intervention on an experimental group compared to a non-intervention, control group. To avoid researcher bias the process of allocation to experimental and control group is random and concealed or blinded. The RCT is the classic experiment (Bryman, 2004, p. 34) and is considered the 'gold standard' in clinical evaluative research (Lilford and Stevens, 2001, P. 8) but there are practical problems especially in complex interventions, as well as ethical issues, for example eligible users are deprived of a potentially beneficial intervention if they are in the control group. It was agreed that an RCT was not appropriate at this stage in the development of Telecare but a modified RCT might be an important source of evidence when Telecare was more widely adopted.

- *Action research* was developed in organisational and management studies as a way of identifying, researching and responding to organisational problems and promoting and testing solutions to such problems. Its defining feature is a cycle of evaluation/feedback/service redesign/evaluation. Action research is participatory, thus it involves doing 'research with and for people rather than on them' (Meyer, 2001, p. 171). The use of an action research approach combines service development with service evaluation as it facilitates and enhances organisational problem solving and learning and helps to overcome resistance to change (Meyer, 2001, p. 173). Since KCC Social Services had already decided to pilot Telecare, it was not appropriate to use action research.

- *Case study* methodology is widely used in health, social care and organisational research and involves 'the detailed and intensive analysis of a single case (Bryman, 2004, p. 48). The objective of the research is to define the key identifying features of a case. Thus in organisational research case studies are used 'to portray the organisation as a whole' (Ferlie, 2001, p. 33). Case studies triangulate different data sources (Bryman, 2004, p. 275) to build up a description of what happened and analysis of why it happened. Thus case studies are not intrinsically evaluative but provide a means for identifying outcomes and identifying ways in which such outcomes could be improved. As

Ferlie notes in organisational studies they provide a way of learning about organisational processes and have an action bias (2001, p. 33), which fit well with the aims and objectives of this project. Given the overall project management structure within KCC, the three sites were treated as part of a single case and the main emphasis of the research was on accessing a variety of different types of data to capture how the pilot developed and identify the ways in which Telecare was used and the key lessons which can be learnt from the pilot.

3. Methods

The case study triangulated a number of data sources:

- *Evidence from previous research and policy* It is important to start any research by looking at previous research studies to avoid duplication and to build on existing evidence. Clarke and his colleagues looked at the published results of RCTs in the top five medical journals and found that many RCTs were in fact duplications of previous works and none discussed their findings in relationship to review of the topic (Clarke et al, 2002). Thus the starting point for this project was the identification and review of current evidence on Telecare. This involved an on-line search of the main relevant databases including CareData, EBSCOhost Academic Search, IBSS (at Bids), Medline and its interfaces, PscyARTICLES, SocioFile, Web of Science, SCIE and the Department of Health website using the keywords: Telecare; assistive technology. Since this is a relatively new area of study this was supplemented with strategies designed to locate 'grey literature' such as unpublished reviews. Since KCC had already built up a collection of various types of literature to support the implementation of Telecare this was a valuable resource.

- *Internal documentary sources plus interviews with key departmental personnel* The starting point for monitoring the implementation of Telecare within the pilot sites was the development of an understanding of the aims and objectives of the pilot projects. The research team was able to access key documentation such as the Active Living consultation report and early and later versions of the

documentation around 'selection criteria', 'monitoring and response pathways' and the 'assessment forms' for example. The research team also undertook semi-structured interviews with key stakeholders in KCC (Project Manager; Area Director for Social Services; and Head of Service: Policy and Standards) to gain a fuller understanding of context for and the aims and objectives of the pilot. The key issues accessed from the documents and covered in the interviews were:

i. The aims and objectives of Telecare

ii. The indicators and criteria which will indicate whether it has contributed to client care

iii. The structure required to develop the service

iv. The types of decisions that needed to be made to establish the service

v. The factors which would result in a successful outcome

vi. Impediments to a successful outcome and the ways they could be overcome.

- *Observation of key meetings* The implementation of the new service also involved planning meetings between key managers and implementation groups which normally involved managers engaged in the planning and front-line staff involved in making specific decisions about which clients would receive the service and/or delivering the service. The researcher was provided with the opportunity to observe and record data relevant to the implementation of the new service at these meetings. The data collected included:

i. The time and location of the meeting

ii. The participants and their role at the meeting

iii. The key issues discussed

iv. The key decisions reached

v. The further action agreed.

Meeting Purpose	Dates Attended
KCC Steering Group	20/07/04, 17/08/2004
Project Board	15/06/04, 22/06/06, 21/10/04, 18/05/05
Project Officers Meeting	05/10/2005
West Kent Implementation Group	4/06/04, 06/08/04, 28/09/04, 14/09/05, 02/02/06
East Kent Implementation Group	18/06/04, 27/07/04, 18/08/04, 12/05/05, 13/10/05, 24/02/06
Mid Kent Implementation Group	23/06/04, 26/07/04, 17/09/04, 14/04/05, 05/09/05, 22/11/05, 31/01/06, 22/03/06
KCC and Monitoring Centre	14/04/2005

- *Data on the operation of the service* Within Kent Social Services there are systems that collect routine data on all aspects of services funded by the Department. In the Telecare system the three monitoring centres play a key role in providing the service and in collecting data on the ways in which the service is used. The research team requested routine information on:

i. who received the service and on what basis;

ii. how and when the service was used;

iii. the outputs of the service, e.g. when and how alarms were triggered, the time taken for call out, who responded, the action taken;

iv. the outcomes, i.e. did the service either delay admission to registered home or to hospital, or did it speed discharge from hospital.

As is clear from the main body of the report the quality of the data provided by the monitoring centres varied. While there was accurate and reasonable information on who used the service and on the calls made to the centres, there was limited information on the output of the service and virtually none on the outcome of the services. These are issues we have addressed in the main part of the report and we have made it clear that when the service is rolled out, the department needs to have systems in place to ensure that both outputs and outcomes can be measured.

- *Survey of service of providers* The research team undertook a survey of service providers to assess their views of the effectiveness and utility of the technology and the ways it has affected their role and delivery of service to clients. Initially the research team planned to undertake a small number of individual (6) and group interviews (3) supplemented by a questionnaire survey. However given the resource constraints of the project, the initial slow development of the pilots and the difficulty of defining the population of staff involved in the pilot projects, it was agreed to focus on the interviews and expanded them. 16 semi-structured interviews were undertaken with service providers to assess their views of the effectiveness and utility of the technology and the ways it has affected their role and delivery of service to clients. For the interviews, emails and letters were sent to a targeted selection of participants inviting them to take part in the interviews with details about the purpose of the research, along with acceptance forms, putting an emphasis on voluntary participation and random selection whilst maintaining representativeness. Consent forms were presented and signed before the interviews took place. The key areas and questions explored with providers were:

    i.   Providers perceptions of the aims and objectives of Telecare;

            'What do you see as the main aims and objectives of Telecare?'

            'How do you think telecare fits in with current changes in social care?'

            'What sort of users/carers do you think can benefit most from telecare?'

            'What do you think are the benefits of telecare for users/carers?'

            'How do you think health and social care services in Kent will benefit from telecare?'

    ii.   Providers perceptions of whether the pilot sites were achieving these aims and objectives;

            'How do you think Telecare fits in with current changes in social care?

    iii.   Providers perceptions of the factors which contributed to the success of the pilots;

            'In your view, what has gone well with the pilot?'

            'Has Telecare had an impact on your professional role?'

            'Has Telecare had an impact on your relationships with other organisations?'

> 'How would you judge whether or not telecare has benefited service users/the way services are run?'

iv. Providers perceptions of the factors that had impeded successful achievement of objectives;

> 'What have been the main problems in getting the pilots up and running?'

v. Providers perceptions of how the factors which impeded the successful achievement of objectives could be overcome;

vi. Providers views on the lessons which could be learnt from the pilots;

> 'Looking back, what do you think should have been done differently?'

> 'What, in your view, are the key lessons to be learned from the pilot?'

The data obtained from the interviews was transcribed and entered into Word files that were coded and later analysed.

- *Survey of service users and their carers* Given the importance of helping clients live in the community and supporting carers, accessing client and care perspectives was an important part of the study. The research team undertook a survey of service users and carers to access their views of the acceptability, effectiveness and utility of the technology. The initial plan for the survey was to have a small number of individual interviews with clients (users) and carers (6) to get initial feedback and assist in developing an interview schedule for 12 focus group interviews. The approach used evolved as the project developed. Initially, Kent County Council provided the researcher with the details of the users and carers in the pilot. Fifty-two information sheets were sent from the Project Manager via the research team, outlining details of the project and informing them of the researchers' intention of follow up contact. The option of withdrawing was given, and there were eight individuals who declined to participate. This method of recruitment was slow and largely unsuccessful; the researcher encountered a number of problems in the follow up calls. This slow progress was reviewed by KCC and CHSS who agreed that Project Officers should undertake the interviews as part of their follow-up reviews of the users on the pilot.

100 interviews were conducted in total with users (26 West Kent; 45 East Kent; 29 Mid Kent). Of those interviewed, 41 were males and 59 female. 24 interviews were conducted with carers, of whom 10 were male, 14 female.

Age	Percentage of carers
Below 50	17%
51-60	33%
61+	25%
Did not answer	25%

Relationships to the users included 25 per cent spouses, 55 per cent sons/daughter, 8 per cent were other relatives and 12 per cent were recorded as 'other'.

The research team was concerned to ensure that the interviews complied both with ethical and governance requirements and minimised possible distress and anxiety. All participants received an information sheet outlining the aims and objectives and nature of the interviews. At the start of the interview the main information was repeated. All participants were informed that any information they shared would be voluntary and so they were not obliged to share anything that would cause them distress or harm. They were also informed that should they feel uncomfortable or that they no longer wanted to participate, they were free to leave without any consequences. Participants gave prior consent to interviewers using audio recording equipment. At the end of the discussion, the interviewer gave contact details for services the participant could contact should they have any worries regarding any issues brought up.

To provide comparability the schedule of questions used in the interviews were developed from the questionnaire utilised in Fold's Northern Ireland project evaluation (Hougton et al, 2005). The key topics and questions covered user and carer perceptions and explored:

i.   How they entered into the scheme;

- How did you find out about the telecare service?
- Was this because you had a particular problem with your health / home / personal security / other at the time?
- Who was involved in making the decision to get the devices?
- Who filled out the referral form for the devices?

ii. User needs and how Telecare has addressed those needs;

- Why do you think the devices that you have are suitable for you? (establish disability / health / safety / security concerns (or other reasons)
- Has the Telecare addressed your particular needs and concerns in terms of (disability/health/safety/security)?
- Before having the telecare did you have a regular carer? Does that carer / do those carers call on you on a regular basis nowadays?
- Has telecare enabled you to live your life differently?
- How important would you say the telecare service is to you?

iii. User and carer use of the service and experience of response services;

- One of the main reasons for installing the Telecare service was to provide a guaranteed support line, 24 hours a day, every day of the year, helping people live safely and more independently. Do you think this has been achieved?
- Do you find the devices easy to operate?
- Since having the telecare, have you used any of the devices? How many times roughly? Can you explain what happened? How did you feel about this? Is it easy/difficult to stop the device when the alarm is triggered? (if applicable)
- How often do you wear your pendant?
- What has the response centre done when an alarm has gone off?
- Were you absolutely happy with the actions taken and the service you received?

iv. User and carer perceptions of the benefits of the service;

- In your view, has the Telecare enabled you to stay living where you are?

- What do you think are the main benefits to you of having the Telecare devices, if any?

- Do you think there are any disadvantages?

- Looking back to before you got the Telecare, had you thought about moving from your home?

- At the moment are you thinking of moving from your home?

v. Charging issues;

- You received the devices free as part of a pilot. Do you think you would have installed the equipment if it were not free? If not, why do you think that is?

- What do you think is a reasonable amount to pay for the Telecare service?

- Kent County Council is considering introducing a charge for all new users of the Telecare service (you will not be affected) of between £10 and £20 a week. The actual amount people would pay would depend on their income, so many people would not pay the full charge. If you imagine that you were a new user of Telecare, would you be willing to pay this charge?

vi. User and carer perceptions of any ways in which the service could be developed.

- Are there any devices that you were offered but that you declined?

- Are there any devices that you have that aren't useful to you?

- Can you tell me if you think there is anything that could improve the service you receive? How? Why?

- Can you tell me what you would do if you needed to make a complaint about the service?

Due to delays in obtaining adequate recording equipment, not all user and carer interviews were tape-recorded. However the interviewer did record information on

the structured questionnaire proforma during the interview. This data was then analysed using SPSS. Quotes and observations from interviews were transcribed and organised into themes and entered in Word onto different sheets that had headings for the main areas of enquiry. The advantage of this approach is that it is pragmatic, data is more manageable and information reflecting the same issues can be compared more easily. However, a weakness of this approach is that subject areas of analysis are somewhat driven by the interview schedule and questionnaire more than by responses.