research in practice for adults

Telecare: a review of the evidence

(Compiled as an one-to-one support project for Cumbria)

1 Background

"Telecare has huge potential to support individuals to live at home, and to complement traditional care. It can give carers more personal freedom and more time to concentrate on the human aspects of care and support and will make a contribution to meeting potential shortfalls in the workforce." *Independence, well-being and choice: Our vision for the future of adult social care in England (2005)*

This statement on the benefits of Telecare, made by the Government in 2005, illustrates the strong support being given to the implementation of Telecare systems throughout the country. **Telecare involves the use of electronic sensors and aids which allow people to live at home, independently for longer**. It plays a role both in preventative care as well as in providing emergency support. This report will provide a rapid review of the literature on Telecare, looking in particular at evidence on outcomes and innovations.

Starting first with a quick overview of the place of Telecare in current policy, the issue relating to keeping people independent and in their own homes for longer is what makes Telecare such a pivotal part of current Government policy on adult care. It also feeds into the prevention strand of policy – something that is going to become increasingly important in times of restricted budgets. Telecare is seen by the Government as being a key tool in preventing the need for residential care, and by proxy, preventing rising costs for adult social care as the older population rises. Because of this the Department of Health report, *Delivering 21st century IT support for the NHS* (DH 2001) stated that all homes who need it should have Telecare by December 2010.

The 2005 Government Paper – Building Telecare in England, sets out clearly that the expected outcomes of implementing Telecare will be to:

- "Reduce the need for **residential/nursing care**;
- Unlock resources and **redirect** them elsewhere in the system;
- Increase **choice and independence** for services users;
- Reduce the **burden placed on carers** and provide them with more personal freedom;
- Contribute to care and support for people with **long term** health conditions;
- Reduce **acute** hospital admissions;
- Reduce **accidents and falls** in the home;
- Support **hospital discharge and intermediate care**;
- Contribute to the development of a range of **preventative** services;
- Help those who wish to **die at home** to do so with dignity."

(Building Telecare in England – 2005)

We will examine outcomes in a later section of this review, but this list serves to highlight the background to the push towards Telecare. There is clearly a strong belief that Telecare will have major impacts on reducing cost and improving wellbeing by increasing independence and providing reassurance.

Telecare devices include both those that raise an alarm at a local call centre as well as those that raise a local alarm to be acted on by a partner of family member. They can include home hub units for example, which are a type of communication centre in the home linked to a number of Telecare devices such as temperature sensors and fall detectors. If activated, the call centre will call the person who can respond either by hitting a button on the home hub or the alert pendant worn around the neck. Other Telecare devices include bed sensors, environmental sensors and security devices. Other types of assistive technologies include telehealth and telemedicine devices which deliver more health specific services, but those are not going to be discussed in this review.

The key point about all of these devices is that they are designed on an individual basis. This is another key link to government policy – they are a good tool for personalisation of care. Individuals have a thorough assessment before a design is made to meet their needs. Telecare can be considered as part of individual budgets and direct payments. In terms of government support, there was £80 million provided in Preventative Technology Grants in 2006 to get local authorities started and now increasing numbers of local authorities are factoring Telecare into their service provision. There is a Government sponsored Telecare Learning and improvement network (LIN) (www.dhcarenetworks.org.uk/IndependentLivingChoices/Telecare) as well as the Telecare Services Association (www.Telecare.org.uk) which is supported by the Government to provide advice on implementation of Telecare systems. The NHS Purchasing and Supply Agency (PASA) Telecare national framework agreement (NFA) allows all public sector bodies to source their own Telecare and telehealth solutions without having to undertake their own sourcing and tendering exercises (http://www.pasa.nhs.uk/PASAWeb/Productsandservices/Telecare).

2 Implementation

So there is evidence on strong Government support to the use of Telecare, but what about putting it into practice? Whilst this review is not intended to focus on issues relating to implementation of Telecare, it is worth underlining the key problems currently being experienced in putting Telecare systems in place. There is increasing evidence that the mainstreaming of Telecare is not happening as easily or as readily as the Government may have wishes, and the main reasons for this seem to rest with issues relating to organisational change as well as with commissioning services who are unhappy about making the investments involved. There are also issues around **acceptability of Telecare to older people**.

But before we discuss these issues in more detail, it is worth looking at the key points outlined by the DoH for implementing Telecare. They recommend that there is:

- The development of a **clear vision** of Telecare services
- Commitment from leaders and managers within **partner organisations** eg. through a project board
- **Early involvement** of users, carers, staff etc
- Consideration of **ethical issues** and consent (in particular for people with dementia)
- Identification of Telecare **'champions'** and development time
- Established **funding** (existing and new)
- **Awareness and training** for practitioners
- **Workforce development** issues addressed
- **Adjustments** made to existing protocols, care pathways etc

- Provision of Telecare as a **'mainstream'** service
- **Monitoring** of progress and review of benefits. *(CSIP Implementing Telecare 2005)*

This list focuses strongly on organisational issues as being key to successful implementation. This echoes The Audit Commission report on implementing Telecare (Audit Commission 2004) which stated that the biggest obstacle to successful Telecare implementation is at the organisational level. Telecare requires a shift in attitudes within the health and social care staff stakeholders, as well as cross-organisational and multi-disciplinary working. It also requires a shift in attitudes within the service user and carer groups. The Audit Commission have said that implementing a Telecare service requires consideration of:

● organisational complexity and identifying stakeholder needs (e.g. how will Telecare change how the organisations currently work? What are the multiple needs of stakeholders in the organisations, as well as the service users? How will Telecare meet or complicate these needs?
● differences in organisational cultures and values (e.g. between health and social care professionals)
● project evaluation arrangements (e.g putting outcome measures into Telecare design)
● apportioning the costs of Telecare (health or social services? See section on "Outcomes")
● ethical issues
● quality standards (Audit Commission 2004).

Issues relating to **user uptake** are proving to be complex, as much of the modelling and planning for Telecare has been done from a professional or policy maker perspective. User need has often been assumed rather than based in reality. In particular, little research has been done on the **user perspectives** on Telecare. What little evidence there is concentrates on those already in receipt of Telecare who may often not want to criticize the care in case it is taken away from them.

One particular study has used a modelling approach to introduce the idea of perspective Telecare uses and assess their opinions on it. They found that:

- Many recognised the potential benefits of Telecare, but were **critical about aspects of the design**. They were not happy with wearing pendants or hearing voices coming from machines.
- There were also concerns that Telecare **could limit choice** and independence, with people having to stick to the routines expected of them by the system.
- Concerns were also raised about the **confidentiality of the systems** – everyone who had access to the system would know about the individual's routine and health care needs.
- Particular concerns were raised around the use of **Telecare and dementia**. Many felt that the systems were too complicated for dementia sufferers to use, or would confuse people who may already be confused.
- Another real fear, expressed by many is that Telecare would **replace human contact**. This could heighten isolation and also means that the little issues which carers or staff may notice will be missed. *(Persival and Hanson 2006).*

Any implementation of Telecare needs to start with a thorough examination of the needs, hopes and fears of the service user population to ensure that the system meets the needs of the service users as well as is proposed in a way that addresses people's fears about such a system. A pilot study of a **project in Kent** found that over a third of users felt that they had not played an active part in the decision to install Telecare and that three quarters of carers felt that the person they cared for had not had any input in

the decision *(Kent Pilot evaluation 2006)*. **Service user involvement in planning** and decisions-making is clearly something to be considered well in the planning for Telecare.

The other area to be considered in implementation is **commissioning**, which will not be covered here as it is a separate and complex issue and the focus for this document is on application and outcomes, but commissioning is well covered in a document from CSIP entitled "Implementing Telecare" *(CSIP 2005)*. Within the same document there is a very useful table which is a good summary of the key advantages, barriers and concerns for Telecare. Another table from this paper which sets out barriers and how to overcome them is included in Annex A.

Table 3.5(a) Advantages, barriers and concerns for Telecare

Area	***Advantages***	***Barriers and concerns***	***Comment***
Care Managers	Options in a care plan either alone or with home care/Supporting People arrangements Alternative solutions to risk reduction Ability to improve independence.	Initial cost Understanding knowledge of options	Telecare needs to be built into Social Services care management systems and Supporting People plans Costing could be picked up by ICES S31 or other pooled funding arrangements
Carers	Supports a care plan Provides confidence and re-assurance	Lack of confidence in equipment and response Responding to false alarms	Demonstration flats can be helpful Improved reliability Standards for equipment and response services
Discharge planners	Prompt discharge from hospital. Early discharge planning needed. Pre-admission information from district nurses (DNs) and GPs and better links with Occupational Therapists (OTs)/Allied Health Professionals and Home Improvement Agencies	Inappropriate identification of patients who could benefit from Telecare Telecare could lead to lack of confidence in equipment	Control centres could provide a "care coordination and reference role" as well as the monitoring service provision itself Utilise the work of Home Improvement Agencies (HIAs) to tackle disrepair, property health & safety checks and provide aids and adaptations
District nurses and Community matrons	Remote monitoring and clinic support by nurses Visits saved so time could be reallocated for preventative work Telecare devices such as falls monitors could	Time for multi-disciplinary training, agreeing protocols etc Initial cost of setting up	Comprehensive training, clear protocols and pathways of care are vital Links to NHS direct and other out-of-hours services could be beneficial

	be included in falls programmes to improve confidence		
Users and carers	Supports a care plan Provides confidence and re-assurance Encourages independence, control and self-care May reduce adverse incidents eg falls Reduces isolation 24/7 monitoring	'Big brother'/ethical issues Monitors may be abused, disabled, forgotten, lost Compliance issues	An early discussion with users and practitioners on ethical and other issues will help to overcome this.
Housing managers	Support in sheltered/supported and extra care housing Development of integrated care services Services to enable older people to live independently	May be more difficult to co-ordinate in other community settings	Clarity needed on local capital and revenue funding arrangements Link with Fair Access to Care Services (FACS), floating support and other Supporting People funded services
Intermediate care, Step-up, Step-down	Support intermediate care programmes and rehabilitation In- patient units can give time to test equipment and gain user and carer confidence	Lack of Telecare awareness of Primary Health Care Team particularly GPs and district nurses may lead to uncertainty of benefits	Follow up after discharge vital to sustain clients rehabilitation and confidence in Telecare Assess 'move-on' housing with care options such as extra care
Occupational therapists	Single assessment process (SAP) Occupational therapy role in assessing for Telecare and access to grants such as Disabled Facilities Grants (DFG's)	Different types of assessments	Training and awareness needed in Telecare assessment and implementation Useful to include Telecare in SAP discussions
Community Safety officer	Provides a number of crime prevention roles Bogus caller protection Domestic violence	Compliance issues	

	protection Intruder detection Witness protection, racial harassment		
Specific user groups eg mental health/ dementia/ learning disabilities	Allows early onset dementia sufferers to stay at home longer Provides respite for carers	Compliance issues Consent issues	Telecare needs to be built into Social Services care management systems and Supporting People plans

(CSIP 2005: page 12)

3 Outcomes

Identifying and measuring outcomes has become an increasingly important part of the move towards mainstreaming Telecare. Commissioners who may feel reticent about investing in the systems require clear evaluation data outlining cost benefits, whilst directors of social care seeking to provide the best service they can within the sphere of independence, choice and personalisation want to make sure that the outcomes are beneficial for service users and carers.

With this in mind, the Department of Health launched the "**Whole System Demonstrator – An overview of Telecare and Telehealth**" – a two year research project to find out how technology can help people manage their own health while maintaining their independence. It is believed to be the largest Randomised Control Trial of Telecare and telehealth technologies in the world to date. The project includes three sites – Cornwall, Newham and Kent. **Results will be published late 2010** (WSDN DoH 2009).

Whilst waiting for the results of this large study, there are still an increasing number of smaller scale studies showing the outcomes of Telecare. And they all seem **rather positive**. In fact, one study on outcomes conducted for the Department of Health reported that "…. no study (of Telecare) has yet demonstrated any negative or adverse effects" (Williams 2008). Another positive paper – published in 2009 by a Leeds University project supported by the Department of Health, (Yeandle 2009) highlights the evidence base for Telecare, looking at outcomes and uses, and leads to the conclusion that it can be an investment process that makes big savings in the long time, eliminates common risks to well-being and enhances quality of life. They state that investment is particular **low-cost**, as well as being not disruptive of daily routines or intrusive in the home. The report provides very useful outlines of the costs and arrangements involved:

- A typical basic Telecare package (pendant alarm, Lifeline and box, plus flood detectors, temperature monitors and smoke/movement detectors) costs £400 - £500 to install, about £10 per week to operate, and between £30 - £80 per year to maintain.
- Telecare response centres have comparatively modest costs (e.g. the very large response centre in Doncaster has over 80,000 connections, 70 operational staff, working day and night shifts to cover 24/7, and 12 support staff, handling between 3,000 and 4,000 calls every day). Large response centres run very efficiently, and report few complaints (for example Doncaster recorded only 6 complaints over a month when 120,000 calls were dealt with).

The following are some of the key findings of Telecare outcomes highlighted in this report:

- Telecare **reduces risks** in the home to older, disabled, sick and vulnerable people – from fire, smoke, gas, extremes of temperature/weather, falls, etc.
- It produces **rapid** and appropriate responses
- It provides assistance in the management of **specific conditions**
- It can **delay** in the entry of people with some conditions to residential or nursing care – including dementia sufferers whose numbers are set to grow so rapidly in coming years.
- It enables more people to be **discharged** in a timely and safe way from hospital care achieving significant cost savings, but also enabling them to be at home where most will prefer to be.
- It produces **cutting of some unnecessary** costs from the health and social care system – including some types of overnight 'sleeping services', certain types of home visit with their associated wasteful travelling time and costs, and some 'checking' and 'reminding' support which can be provided equally well remotely.

Evidence about the impact of Telecare on **carers** is also positive, highlighting:

- Improvements in their sleeping patterns, which reduce exhaustion and help them sustain their caring role.
- Reduced anxiety and stress, as there is less need to worry about the safety of the person cared for – in Scotland, 75% of carers reported reduced stress.
- Improvements to the relationship with the cared for person.
- Some carers being enabled to sustain paid work alongside a substantial caring role (which without Telecare support would be very difficult to manage).
- No, or very limited, reductions in the time spent with the person cared for, although some indicate that the way this time is spent together may have changed (usually for the better) (Yeandle 2009).

These findings about carer benefits are supported by a number of other studies on carers and Telecare, including "A weight off my mind" – (Carers Scotland, Jarrold and Yeandle 2009) a study carried out in Scotland with funding from the Scottish Government's Telecare Development Programme. This study found that most carers found that Telecare had improved their quality of life, leaving them feeling more relaxed, less stressed, more able to get on with other parts of life, and more supported in their caring role.

The Scottish Government's Telecare Development Programme has also been subject to a very large scale evaluation – **probably the largest around to date**. The Scottish Government has become very keen on Telecare, and in 2006 launched the Telecare Development Programme, the aim of which is to provide the foundations for Telecare to become an integral part of community care in Scotland. The programme covered 32 partnerships, in their development of Telecare services from 2006 – 2008. £8.35 million was made available to spend. The evaluation of the programme was run by York Health Economics Consortium, and saw quarterly data returns from the different Telecare partnerships, which were designed by the Consortium. These returns were designed to measure progress on a common set of outcomes and efficiencies. The forms used for this evaluation are included here in Annex B. As well as these outcome measurements, the evaluation used postal questionnaires to capture opinion from service users and carers, and chose 5 case study sites to provide additional information through site visits and telephone interviews.

Overall, up to £8 million was invested in the first year, but the first year saw savings of £11 million. As well as these financial headline outcomes, the programmes were found to:

Reduce the number of avoidable admissions and readmissions to hospital:
- By the end of 2007/08, 18 Partnerships reported having avoided unplanned hospital admissions, with these savings being made across 22 projects;
- During this period it is estimated that the number of unplanned hospital admissions was reduced by 1,220 (and by 13,870 bed days);
- The main beneficiaries were older people.

Increase the speed of discharge from hospital once clinical need is met:
- By the end of 2007/08, 20 Partnerships reported having reduced the number of delayed discharges (used as a proxy for increasing the speed of discharge), with these savings being made across 21 projects;
- During this period it is estimated that the number of discharges facilitated by TDP funds was 517, with an accompanying saving of 5,668 bed days;
- The number of bed days saved for each facilitated discharge appears generally to be between 7 and 15 days;
- The main beneficiaries were older people.

Reduce the use of care homes:
- By the end of 2007/08, 23 Partnerships reported having avoided care home admissions, with these savings being made across 26 projects;
- During this period it is estimated that the number of care home admissions was reduced by 518 (and by 61,993 care home bed days);
- Over half of the beneficiaries were older people – Telecare appears to have been particularly successful at preventing (or possibly just delaying) admission to a care home for people with dementia.

Improve the quality of life of users of Telecare services:
- About three-fifths (60.5%) of questionnaire respondents felt that their current quality of life was either "a bit better" or "much better" than before they had their equipment; about a third (34.6%) thought that it had "stayed the same" and less than one-in-twenty (4.9%) respondents thought that it was worse;
- In terms of Telecare's impact on specific aspects likely to affect users' quality of life:
  Over half (55.2%) of the respondents felt that their health had not changed, whilst slightly more than half of the other respondents (comprising 27.1% of the total) thought that their health had improved;
  Almost all (93.3%) respondents felt safer;
  Over two-thirds (69.7%) felt more independent;
  Very few (3.5%) felt lonelier;

Four-fifths (82.3%) either "disagreed" or "strongly disagreed" that they felt more anxious and stressed;
Most (87.2%) thought that their families now worried less about them;
About two-fifths (40.8%) felt that their equipment had not affected the amount of help they needed from their family, whilst about one-third (32.8%) felt that they needed less help.

The breakdown of monetary savings was as follows:

	Estimated monetary saving (£)	Per cent of monetary saving (%)
Increased speed of discharge from hospital	£1,731,944	15.5%
Reduced unplanned hospital admissions	£3,343,467	30%
Reduced care home admissions	£3,421,621	30.7%
Reduced nights of sleepover care purchased	£557,119	5%
Reduced home check visits	£1,796,039	16.1%
Locally identified efficiencies, namely reduced	£301,000	2.7%
Total	**£11,151,190**	**100%**

(Evaluation of the Telecare Development Programme 2009)

Another piece of research in Scotland recently published (Exploring the Implications of Telecare Service Provision Feb 2010) concentrated on modelling the cost implications of Telecare. They did this by choosing two areas (Falkirk and Forth Valley and West Dunbartonshire) in which the care partnerships were asked to identify a number of typical Telecare service users, and to then specify the key elements of the overall care service packages being provided to them. They were also asked to specify appropriate alternative care arrangements not involving Telecare. Finally, the partnerships were asked to provide unit cost information for the elements of the various care packages specified.

This financial modelling showed that most of the financial responsibility for these packages lay with the social care rather than health budgets and that in very few cases is it more expensive to supply a Telecare inclusive care package. Finally they found that in most cases the big savings experienced from using Telecare were experienced by social rather than health services. In terms of experiences of this type of financial modelling, the care partnerships involved found assembling the unit costs very challenging, although these are provided through the Personal Social Service Research Unit (www.pssru.ac.uk).

4 Applications and innovations

As the use of Telecare spreads, there are increasing numbers of innovative applications and approaches to its use. The following gives examples of some of the most interesting cases.

4.1 North Yorkshire Country Council runs Greenfield Court, which is supplied by Tunstall Healthcare Groups. Stakeholders, local government, voluntary and housing sector and suppliers all came together early on to develop something that works for

everyone. They started with a pilot in 2005/2006 with 42 users in rural and urban areas.

Using these Telecare systems, the Council has saved £1million, cutting the average cost per person by 38%. Telecare is a priority in North Yorkshire County Council – not an add-on. It has made a point of ensuring there is clear leadership with a solid commissioning strategy and all staff have received a lot of training and support to make it part of the initial personalised assessment process.

As part of their evaluation process, all new Telecare users during September 2008 were assessed, with care managers identifying what their original (pre-Telecare) package of care would have been and comparisons made with the actual Telecare received. Those who would have needed 10 or more hours at home care saw a reduction in the number of hours needed, whilst those needing 7 or less hours needed less hours with some needing no hours at all. There was a net average efficiency per person of between £12,246 and £1,756 per area averaging at £3600 per person – a 38% reduction in care package costs. Applying those savings to the ongoing cohort of Telecare users showed a saving of £1.1million.

There are a number of approaches which have helped in the success of the North Yorkshire County Council Telecare system. NYCC has worked closely with seven housing providers in the county, which means that they can find out what equipment is available to be used, as well as ensuring housing providers are trained to equip and maintain Telecare systems, as well as being able to recognise when someone could benefit from it. The council also recognises that key to their success is having four Telecare coordinators who work county-wide to ensure performance assessment mechanisms are in place, to assist assessors in specialist assessments and to raise awareness and skills amongst county staff as well as partner organisations. The other key success factor is training. In 2008/09 4,595 multi-agency staff attended training from basic awareness to installation of equipment, which means they have all had significant experience of the technology. All assessment staff in social care have received training, and further training is now taking place with independent and 3rd sector staff.

4.2 Gloucestershire County Council

In May 2006, GCC launched the Gloucestershire Telecare Project – TeleG using the DH Preventative Technology Grant. They started with a clear planning process, defining in particular the following areas: Measurement – setting out clear targets, how to achieve them and how to assess them; Eligibility – defining who would most benefit and how to identify them; Referral – defined clear referral route, and promote them; Training – delivery Awareness and Technology Matching training, and training made part of a regular ongoing programme to refresh knowledge, update with new technologies and train new staff; Installation – a well-trained installation team was put together ; Marketing – development of "advertising" to service users and carers; Equipment – which was initially purchased with PASA agreement, but later commissioned via the Integrated Community Equipment Service to improve integration.

The outcomes were very positive, with 96% of service users rating Telecare as important or very important, 94% stating that Telecare had improved their independence, and general responses being that Telecare had increased peace of mind and well-being for both service users and their families. An external evaluator's report found that the project should be mainstreamed at the end of the two years, and expanded to 2,000 users within 18 months. Although the annual predicted costs for this would be approximately £800,000, (equipment £200,000, Installation, maintenance etc. £160,000, prescription and administration £250,000 and Monitoring £200,000) the immediate savings would be at least £1million. This figure was based on a conservative

estimate of delayed admission to hospital or residential care, resulting in a saving of £10 per person per week.

In terms of cost benefit analysis, GCC undertook their own cost savings analysis generated over the two years of their TeleG project. It was based on data collected from 55 assessments at the start of the two years and again at 12 months, giving comparison data on items such as client support services, hospital admissions, consideration of care etc. The average nett savings to health service users was £7,871.79, and to social care users, £13,292.37. Extrapolating these average cost savings across the 368 Telecare users in Gloucestershire, GCC have saved a potential £4,273,645.90 over the two years of the project.

4.3 West Lothian Care Service

In West Lothian, a second generation Telecare approach initially piloted in 1999 is now a mainstreamed service that is pivotal to the whole framework of care and support for older people across the entire Local Authority area. By February 2006 there were 1,950 households with a Home Safety Service package
consisting of:

- a 'lifeline unit', which links sensors to a call centre when triggered
- two passive Infrared (PIR) detectors to monitor movement activity and potential
- intruders
- two flood detectors, activated by leaking pipes, overflowing baths, etc.
- one heat sensor, sensitive to both high and low temperatures
- one smoke detector.

Additional technological devices were provided where assessed as required, and could include further passive alarms, such as door opening alerts and fall detectors, or active devices such as remote video door entry systems and pendant alarms.
In 2006, an independent evaluation of the West Lothian service undertaken by the University of Stirling reported that:

- A large group of respondents living at home, both older people and informal carers, reported the positive impact of the smart technology. It was widely seen as supporting safety and security both of the person and the home, and thus as helping people to stay in their homes.
- The installed technology has been especially effective in dealing with delayed discharge.
- Weekly costs of Telecare-based care service provision were around £145 - £185 less per week than a West Lothian care home alternative.

Cost benefit evaluation found that:

- delayed discharges reduced to 2.14 per 1,000 compared to national average of 3.48
- average stay in private care homes reduced from 36 to 18 months between 1999 and 2002
- in 2005, the average cost per person in the intervention group to the Council was £7,121, compared with a cost of £21,840 per person in long term care
- 3,400 hospital bed days were saved (full year equivalent)
- better, more efficient services provided by multi-disciplinary team.

4.4 Northamptonshire County Council

The 'Safe at Home' project was the first Telecare service to be established in England and Wales. It began as a small scale project in 2000 and a further larger study was undertaken between June 2002 and March 2004 (i.e. over 21 months). The aims of the project were to use existing assistive and Telecare technologies to support people living

with dementia, and their carers, to compensate for disabilities arising through dementia and to manage risks that may jeopardise continuing independence.

During the course of the project 233 people with dementia received Telecare services. A comparator group of 173 people in Essex with similar age and gender profiles and MMSE22 scores was used to investigate the impact of the Telecare provision. The research found that, compared with the control group from the neighbouring area, those receiving services from the Safe at Home project:

- used fewer services
- had fewer visits and fewer hours of contact per week
- were more likely to live alone.

More specifically, the evaluation also showed:

- people in the control group were 4 times more likely to leave the community than Safe at Home users
- users spent less time in hospital, nursing or residential care, with a net equivalent saving of £1,504,773 over 21 months
- on an annualised basis, the health care cost saving in the Telecare group was 2.9 times greater than the amount invested
- savings of £1.5m were achieved over the 21-month period for an investment of £0.289m
- the technology was reliable
- 87% of carers surveyed felt that the project had made a difference
- almost half of carers surveyed felt that the project had improved the confidence of the service user.

4.5 Durham County Council

In Durham, the County Council piloted a Telecare service that included four devices, namely wandering devices, carbon monoxide detectors, fall detectors and keysafes. These devices, which were distributed to 148 people over a seven-month period (December 2003 – June 2004), were given to vulnerable clients to help them maintain independence. This pilot was funded jointly from contributions from social services, housing and a neighbourhood renewal fund with a budget of £25,000.

The evaluation found that the pilot had achieved the following:

- saved 1,783 bed days in residential care homes
- facilitated early discharge
- prevented inappropriate or early admission into residential care
- prevented re-admission to hospital
- detected falls and so lessened their long-term consequences
- initiated a response to emergency situations
- improved clients' quality of life and gave them more choice in their own care
- arrangements
- given informal carers respite and peace of mind.

4.6 Cumbria County Council

An intermediate care project started in February 2002 and took an innovative approach to the provision of an agreed period of intensive care and support in the home for vulnerable people, following discharge from hospital or to prevent an admission to hospital. Once clients had received an initial assessment they were normally issued with a six-week plan. A typical package included:

- daily contact with the individual
- the provision of a range of sensors (e.g. a fall detector) subject to the needs of
- each person; and
- an exit assessment to determine the short-, medium- and long-term requirements for sustaining independent living

- a report by the University of Kent stated that 739 individuals had received the service and that 85 clients were prevented from going into hospital by the project. In addition:
    - 73% of the Telecare packages were installed to support a transfer of care;
    - 12% of the care packages prevented admission to hospital;
    - 32% of the packages of care were used to monitor clients at risk of falling.

The authors of the evaluation concluded that Telecare could play a key role in supporting services that enable individuals to live independently in the community.

4.7 Sandwell Metropolitan Borough Council

The Sandwell Metropolitan Borough Council's Housing Department Telecare project was piloted in January 2003 as an add-on or extension of an existing Community Alarm Service. The pilot's 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.

Researchers reported that the pilot achieved some of its objectives. They estimated that out of the first 100 users were able to stay at home, while 22 had a fall or accident prevented. The principal dilemma uncovered by the first stage of the evaluation concerned the ability of the service to respond with appropriate alacrity to the activation of Telecare sensors in each particular user's circumstances. The success of the first 12 months attracted further funding to allow the project to continue and expand over an additional two years. However, interviews with health and social care staff highlighted a relatively low level of knowledge of the project's work among key middle managers across Sandwell.

4.8 Kent County Council

Kent County Council was another early innovator, although information about this project was not published until December 2006. Kent County Council developed three Telecare pilots in 2004, with the intention from the outset of adopting Telecare as a mainstream service approach across the whole of the Social Services Directorate in the future. The Telecare equipment provided was tailored to the needs of individual users. The devices used in the pilots were:

- lifeline and pendant
- passive infrared movement sensors
- bogus caller buttons
- pull cords
- smoke detectors
- flood detectors
- temperature extremes detectors
- gas detectors
- carbon monoxide detectors
- falls detectors
- bed sensors
- chair sensors
- property exit sensors.

By the end of February 2006, 320 people were receiving a Telecare-based service through the pilot. An independent evaluation found that most people felt that Telecare increased their independence and helped them to continue living in their own homes.

(Taken from the Evaluation of the Scottish Telecare Development Programme 2009)

5 Conclusion

5.1 There is a growing body of evidence showing the multiple positive impacts of Telecare, and this will soon be increased by the publication of the large-scale evaluation of the Department of Health's Whole System Demonstrators due at the end of 2010. The benefits are both in terms of cost as well as service user and carer well-being, although there is less evidence about perceptions of users about Telecare.

5.2 Implementation of a successful Telecare system requires a focus not only on investments and cost-savings, but on user need, hopes and fears about Telecare and issues relating to organisational change. In many cases, these become the main blocks to successful systems.

5.3 Evaluation systems are complex and have taken different forms. In some cases, modelling has been carried out, in which cases are assessed and unit costs sought for non-Telecare services and compared to the with-Telecare costs. Others have seen quarterly reports highlighting costs and progress against outcomes. Issues relating to attribution of costs and savings are particular complex and require thorough investigation.

5.4 Although the evidence all seems to point towards the benefits of Telecare, there is also a recognition that commissioners are still reticent to take the leap and invest in Telecare. Many appear to be waiting for yet more evidence about the clinical and costs effectiveness, and for all uncertainties to be cleared. As social care budgets come under increased pressure however, it would appear that increasing numbers of councils will need to turn to such long-term cost-saving measures and that Telecare could be the answer. For service users and carers, the benefits are also clear, with the caveat that their needs are fully assessed and concerns addressed before systems are put into place.

6 References

Alaszewski, A and Cappello R (2006) Piloting Telecare in Kent County Council – The Key Lessons Final Report – Centre for Health Service Studies, University of Kent. http://www.ehealthnurses.org.uk/pdf/telecareKent.pdf

Barlow, J. (2006) Building an evidence base for successful telecare implementation – updated report of the Evidence Working Group of the Telecare Policy Collaborative http://www.telecare.org.uk/information/45779/46315/46331/46347/telecare_evidence/

Bayer, S. Barlow J. Curry, R. (2007) Assessing the impact of a care innovation: telecare IN System Dynamics Review Volume 23 Number 1 Spring 2007. http://www3.imperial.ac.uk/pls/portallive/docs/1/43011.PDF

CSIP and the Audit Commission (2005) Telecare Implementation Guide http://www.dhcarenetworks.org.uk/_library/Resources/Telecare/Telecare_advice/Telecare-Implementation-Guide-19-July-2005.doc

Department of Health (2009a) Telecare http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@pg/documents/digitalasset/dh_103148.pdf

Department of Health (2005) Building Telecare In England http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4115644.pdf

Department of Health (2009b) Whole Systems Demonstrators – Department of Health 2009 http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_100947.pdf

Department of Health (2001) Delivering 21st Century IT support for the NHS. National Strategic Programme Building. http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4067112.pdf

Hanson, Percival, Aldred, Brownsell, Hawley (2009) Attitudes to telecare among older people, professional care workers and informal carers: a preventative strategy or crisis management? Hanson, Percival, Aldred, Brownsell, Hawley http://eprints.ucl.ac.uk/3845/1/3845.pdf

Harris, A. (2007) Summary of evidence of the effectiveness of Telecare. Dorset County Council. http://www.dorsetforyou.com/media.jsp?mediaid=129785&filetype=pdf

Jarrold, K. And Yeandle, S. (2009) A weight off my mind – Carers Scotland. http://www.jitscotland.org.uk/downloads/1260358820-Final%20Report%20(2).pdf

Newhaven Research (2010) Exploring the Cost implications of Telecare service provision http://www.jitscotland.org.uk/downloads/1267434067-Care%20Package%20Cost%20Modelling%20February%202010.doc

Percival, Hanson (2006) Big Brother or brave new world? Telecare and its implications for older people's independence and social inclusion. IN Critical Social Policy 2006: 26: 888 http://csp.sagepub.com/cgi/content/abstract/26/4/888

Trueman P & Beale S (2010) What does the evaluation of the Scottish Telecare Development Programme tell us? Is it time for a leap of faith? York Health Economics Consortium on King's Fund website.
http://www.wsdactionnetwork.org.uk/news/features/what_does_the.html

Williams, I (2008) *Telecare: a rapid review of the evidence 2005-2008,* report prepared for the West Midlands Strategic Health Authority: NHS West Midlands and University of Birmingham. http://ifh2.westmidlands.nhs.uk/ifh-key-documents/doc_download/111-hsmc-final-report-190508.html

Yeandle Sue (2009) Telecare: a crucial opportunity to help save our health and social care system Bow Group – University of Leeds.
http://www.tunstallhealth.com/assets/Literature/telecarepaper.pdf

York Health Economics Consortium (2009) Evaluation of the Telecare Development Programme – Joint Improvement Team Scottish Government
http://www.jitscotland.org.uk/downloads/1235404195-B59058%20Final%20Report%20low%20res.pdf

Appendix A

Table 3.5(c) Barriers to implementing Telecare and how they could be overcome		
Barrier	***How this barrier could be overcome***	***Comment***
General reluctance to change, deep-rooted professional attitudes	• Costs/benefits, workforce development, education and support for care managers, users, carers etc	• Time needs to be allocated for Multi-agency training; early involvement of all staff (eg workshop with all key agencies) will help joint working • Single Assessment Process (SAP) discussions should help
Social Services and housing at different local government levels (Also diverse housing and care markets, partners such as housing associations, residential care providers and private sector)	• Set up working partnerships, link to ICES Section 31 agreements and other local strategic commissioning or partnership arrangements	• Unitary authority areas should have an advantage with partnership arrangements. • Areas with several different councils and PCTs will need to concentrate on whole systems approach and cross-organisational working
Evidence-based requirements for health, randomised control trials (RCTs)	• Much of the pilot work around the country is now completed • Provide services to users/carers who may benefit based on the evidence • Carry out regular reviews • Use action research and adjust your approach	• Evidence is available in the Audit Commission's report 'Assistive Technology: Independence and well-being 4' (see references)
Project to mainstream transitions	• Look at investment in the local Telecare programme • Carry out cost/benefit work • Look at sustainability and how funds can be leveraged in from other sources of service redesign	• Investment in project officer time to set up systems may be beneficial – Telecare champions are important to successful implementation
Care management protocols and service design – care options, implementation of Fair Access to Care Services (FACS) and delayed discharges	• Protocols must reflect service options available to care managers and others	• Involve staff representatives from all groups in preparing protocols to create ownership
Funding	• Supporting People funding • Link to ICES and use of Access and	• Linking Telecare development with National Service Framework (NSF) and other standards and targets will help

	Systems Capacity funding (2005/6) • POPP funding • Other potential sources of funding if voluntary organisations in partnership • Home Improvement Agencies (HIA's) • Community safety initiatives (fire prevention, bogus callers) • Preventative technology funding from 2006	to raise the profile at strategic level • Inclusion in jointly agreed local plans • Strategic commissioning of services
Cost comparisons	• Compare with major community and acute hospital services, care home costs etc	• A well-placed, comparatively small investment could lead to real cost savings but time will be needed to capture long term benefits • National tariff (From April 2006) charges for emergency hospital admissions could be higher than Telecare costs
Ethical issues, 'big brother' concerns	• Empowering users and carers through demonstration sites, newsletters, training education	• Local ethical approval may be required if trials are being carried out
Service providers and suppliers	• Consider industry standards • Prepare a service specification • Involve suppliers and service providers at an early stage	• A number of standards are in place for Telecare • Contact with other local authorities and health trusts will improve and speed up procurement of Telecare

Appendix B: Outcomes and efficiencies measuring forms from Scottish Government evaluation of Telecare

Outcomes Form
This section of the application form is designed to gather information regarding key outcomes expected by local partnerships as a result of deploying TDP grant funds.
Section A contains four core outcome statements. **It is a requirement of 2007/08 funding release that partnerships complete Section A.**

The core outcome statements have been drawn from across the stage 1 partnership submissions, but seek additional clarity on the size of effect anticipated at local level as a result of TDP funding.

The requirement is for local partnerships to replace the 'X' in the outcome statements with a locally relevant number. Please note it is **not** expected that all partnerships will complete all four outcome statements. Some may not be relevant in specific local contexts, and where this is the case, the partnership should replace the relevant outcome statement with the words "not relevant". However, we anticipate that all partnerships will be able to complete some of the outcome statements.

As stated, to complete the outcome statements, partnerships should use relevant numbers for the local partnership area. In doing this, please note we are not expecting an unfeasible level of accuracy, or an unreasonable degree of effort. To illustrate the level of effort anticipated, we offer the following examples.

Example 1: Saving Hospital Based Care Days. (See outcome 2)
If a partnership expects to use TDP funds to provide Telecare packages for 100 people in order to facilitate earlier discharge from hospital than would otherwise occur, and discussion with relevant health colleagues indicates this might in any given year advance discharge by an average of two weeks, this is a sufficient basis on which to complete Outcome 2 by replacing "X" with "2,800" (=100 x 14x2)

Example 2: Ascribing Outcomes to TDP funded Telecare services
If over the course of the next year it is anticipated that Telecare services funded by the TDP will constitute 15% of all identifiable expenditure on Telecare services within a partnership area, this is sufficient basis for identifying 15% of total expected Telecare related outcomes to the TDP programme.

Example 3: Apportioning Outcomes to Telecare and Non Telecare spending-
If it is possible to maintain a person at home where previously it was not, but this involves a package of Telecare and non Telecare support (for example home visits in addition to call centre monitoring), provided the Telecare dimension of the package was essential, it is reasonable to ascribe the whole of the ensuing benefit to the TDP expenditure.

These examples should make it clear that what is being sought is a reasonably based and thought through quantification of TDP impact.
Section B contains space to provide detail on how the quantities inserted locally into

the core outcome statements have been derived. This might take the form of a description along the lines of example 1. Note it is not a requirement of 2007/08 funding that local partnerships complete section B. This has been included at the suggestion of a number of partnership representatives as something some partnerships might wish to take advantage of.

Finally, section C has been included in order to recognise that partnerships may be seeking specific local outcomes that are felt to be of particular importance, and wish to have these recognised. This might include qualitative outcomes (such as reduction in the amount of stress felt by carers) that do not lend themselves to quantification. Please note that completion of section C is also not a requirement for securing 2007/08 funding.

If you wish to specify additional outcomes reflecting local expectations that would be welcome, but these must be in addition to and not in place of the core outcome statements.)

A: Core Outcome Statements

Outcome 1	Reduce the number of delayed discharges from hospital by X in financial years 2006/7 and 2007/08
Outcome 2	Reduce the number of unplanned admissions for community care based clients by X in financial years 2006/7 and 2007/08
Outcome 3	Remove the need for X care home admissions for community care based clients in financial years 2006/7 and 2007/08
Outcome 4	Increase the number of persons able to maintain themselves at home through receipt of a Telecare service (with support) by X in financial years 2006/07 and 2007/08

B: Notes on How Outcomes Have Been Identified

OUTCOME 1

OUTCOME 2

OUTCOME 3

OUTCOME 4

C: Additional Local Outcomes

OUTCOME 1

OUTCOME 2

EFFICIENCIES
Efficiencies Projection Form
This section of the application form is designed to gather information on efficiencies expected to arise from deployment of TDP grant funds.

Section A contains the core efficiencies statements. **It is a requirement of 2007/08 funding release that partnerships complete Section A.**

The core efficiencies statements have been drawn from across the stage 1 partnership submissions, but seek additional clarity on the size of effect anticipated at local level as a result of TDP funding.

Please note it is **not** expected that all partnerships will complete all core efficiencies statements. Some will not be relevant in specific local contexts, and where this is the case, the partnership should replace the relevant statement with the words "not relevant". However, we anticipate that all partnerships will be able to complete some of the statements.

To complete the efficiencies statements partnerships should use relevant numbers for the local partnership area. In doing this, please note we are not expecting an unfeasible level of accuracy, or an unreasonable degree of effort. To illustrate this, we offer the following examples.

Example 4: Second Round Factors
Telecare services funded under the TDP may allow a person to maintain themselves in the community where previously this was not possible and the only alternative would have been living in a care home. This may in time lead to an increase in the number of home visits required, but it is not possible at this point to quantify this. Under these circumstances it is reasonable to concentrate on generating an estimate of the reduction in care home bed days required, and ignore the second round effect that is currently beyond quantification.

Example 5: Calculating Procurement Efficiencies
Procurement efficiencies can arise for a wide range of reasons, and calculating these across a large number of purchase heads could be complex. Where equipment and services have been secured using TDP funding under the PASA framework, it is reasonable to claim the average procurement saving offered by PASA (currently 14%) as the minimum procurement efficiency for all of this spending. Where the PASA framework has not been used, we expect this will have been because local partnerships have arrangements in place that have been demonstrated to deliver at least as much efficiency saving as PASA arrangements, and therefore will be in a position to directly estimate these.

Section B contains space to provide detail on how the quantities inserted locally into these statements have been derived. This might take the form of a description along the lines of example 5. Note it is not a requirement of 2007/08 funding that local partnerships complete section B. This has been included at the suggestion of a number of partnership representatives as something some partnerships might wish to take advantage of.

Finally, section C has been included in order to recognise that partnerships may be seeking specific local efficiencies that are felt to be of particular importance, and wish to have these recognised. This might relate to much wider effects (such as reduction in the amount of resources required to support carers) that do not lend themselves to quantification. Please note that completion of section C is also not a requirement for securing 2007/08 funding.

If you wish to specify additional efficiencies reflecting local expectations that would be welcome, but these must be in addition to and not in place of the core efficiencies statements.

A: Core Efficiencies Statements

We expect Telecare grant funding provided to generate the following **annual** efficiency effects:	2007/08	2008/09	2009/2010
Number of hospital bed days saved from people ready for discharge			
Number of nights sleepover care saved			
Number of home check visits saved			
Value of procurement savings made			

B: Notes on How Efficiencies Have Been Calculated

C: Additional Local Efficiencies