

An International Centre of Excellence in Telecare – ICE-T
Background and Development



**AN
INTERNATIONAL CENTRE OF EXCELLENCE
IN
TELECARE**

BACKGROUND AND DEVELOPMENT

Final Report

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Report and Workshop Objectives

Report Objectives

The objective of the report is to:

- present an overview of the present environment surrounding telecare in terms of its use by the statutory sector.
- detail the government's agenda for new telecare product and service innovation and the funding sources potentially available to support developments in this area.
- identify new opportunities that are arising and describe how telecare may be developed to meet them.
- act as a discussion document for the consultative workshop of invited stakeholders.
- summarise the output from that workshop.
- develop the vision and operation of an international centre of excellence in telecare (ICE-T).

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Executive Summary

The UK is faced with an increasing healthcare burden, exacerbated by a decrease in the numbers of the economically active. Traditional health and social care models are neither economically sustainable, nor meeting increased consumer demand and expectations.

Currently, care is delivered through several disparate, autonomous public and private bodies, each with their own separate aims, independent budgets and differing responsibilities. This may result in fragmented and complicated service delivery and difficulties in co-ordinating funding between the relevant public bodies, leading to a postcode lottery of service provision.

In the UK it is estimated that there are 17.5 million people with long-term conditions (LTCs). Their care needs vary according to the severity of their condition from mild, well-controlled symptoms requiring little care from the statutory services, through to those with severe symptoms.

The increase in the number of older people and the consequent increase in service demand has led the statutory services to develop the use of technology to assist in the delivery of care – referred to in this report as telecare. We describe telecare as *'the use of information and communication and sensor technologies to deliver health and social support to people to help them live as independently as possible in the lowest intensity care setting consistent with their needs and wishes'*.

The focus of care, and the subject of the majority of trials across the UK, has been on those with highest need, providing telecare as a prescribed intervention. However, this focus leaves little opportunity for preventative care. If future demand on the statutory services is to be reduced, then a means must be developed of addressing those with mild and moderate symptoms and those who are currently healthy, but have a predisposition to LTCs. The next generation of services should support individuals to manage their lifestyle and any health and social care problems they may have. There are some Government initiatives promoting such self-management. We refer to the use of telecare in self-management as elective telecare, which people would choose to adopt before they became eligible for statutory care.

The statutory sector does not have the resources to deliver on this enormous preventative agenda. Therefore, to reduce the unsustainable demand on already hard-pressed health and care services, there is a need to continue with the development of prescribed telecare and start the development of elective telecare.

The technology to deliver comprehensive elective telecare services is largely available and many of the components have been trialled individually in the pilot telecare projects that have been conducted. The innovative step is to provide them on a single platform, integrated with other teleservices provision, and with a user interface that is simple and intuitive to operate. The development of elective telecare will provide the opportunity for the growth of new, sustainable models of private telecare service delivery.

The draft report and consultative workshop identified and endorsed potential thematic application areas and enabling actions for development. These developments will be a challenge but, from the SWOT analysis, we believe that the South East is the place to undertake this work.

The objective is to establish an international reference point for telecare, meeting SEEDA and government agendas for long-term sustainable business growth and for supporting care providers. Initially, the focus will be on SE England, but the aim will be to establish an International Centre of Excellence in Telecare (ICE-T). ICE-T will identify and fund innovative developments in telecare and provide services to organisations that support ICE-T. It is proposed that ICE-T will establish three showcase sites in the SEEDA region, with each site leading on one of the three thematic areas identified as priorities for development, acting as a focus for projects and developing local partnerships in order to transfer technology to end-users and provide a route to market for new sustainable telecare businesses.

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SECTION 1: BACKGROUND AND CONTEXT

1 Drivers of Care Delivery

The proportion of the UK population aged under 16 has been declining since 1995. In August 2008, for the first time, it dropped below the proportion of the population above state pensionable age. The fastest growing age group in the population are those aged 80 years and over.

In the South East, numbers of older people will increase by 45% over 20 years from 2006, with those aged 85 and above growing most quickly. In fact, within 20 years half of the adult UK population will be over 50 and one in four children born today will live beyond the age of 100. Half a century ago, only one in ten children born would have been expected to reach 100.

A consequence of increased longevity is an increase in demand for care services for those with chronic and long term conditions (LTC). The World Health Organisation (WHO) forecasts that by 2020 chronic and long term conditions, which include Chronic Heart Disease, Chronic Obstructive Pulmonary Disorders, Diabetes (type II) and dementias, will be the major disease burden in the developed world. In addition, there will be extra demand created by the lifestyle we're living now.

Within the next few years there will be retirements of experienced staff as the "baby boomers" reach 65. The Office of National Statistics states that by 2015 the ratio of people in work to those of pensionable age reduces from 7:1 when the NHS was formed, to 1:1. In other words, there will not be the workforce to fund or deliver care in the way it is done now. Much of the current care burden is borne by relatives and the voluntary sector, but these two groups will be affected in the same way by the changing demographics.

Over the same period there has been a general rise in affluence which has manifested itself as providing consumers with choice. Reflecting this change, over the past ten years the statutory services have moved from calling people "patients" to referring to them as "service users" or "consumers". There has also been a deliberate attempt to introduce an element of choice into the NHS. This shift means that people's expectations of the care they will receive in old age have changed and they demand certain standards.

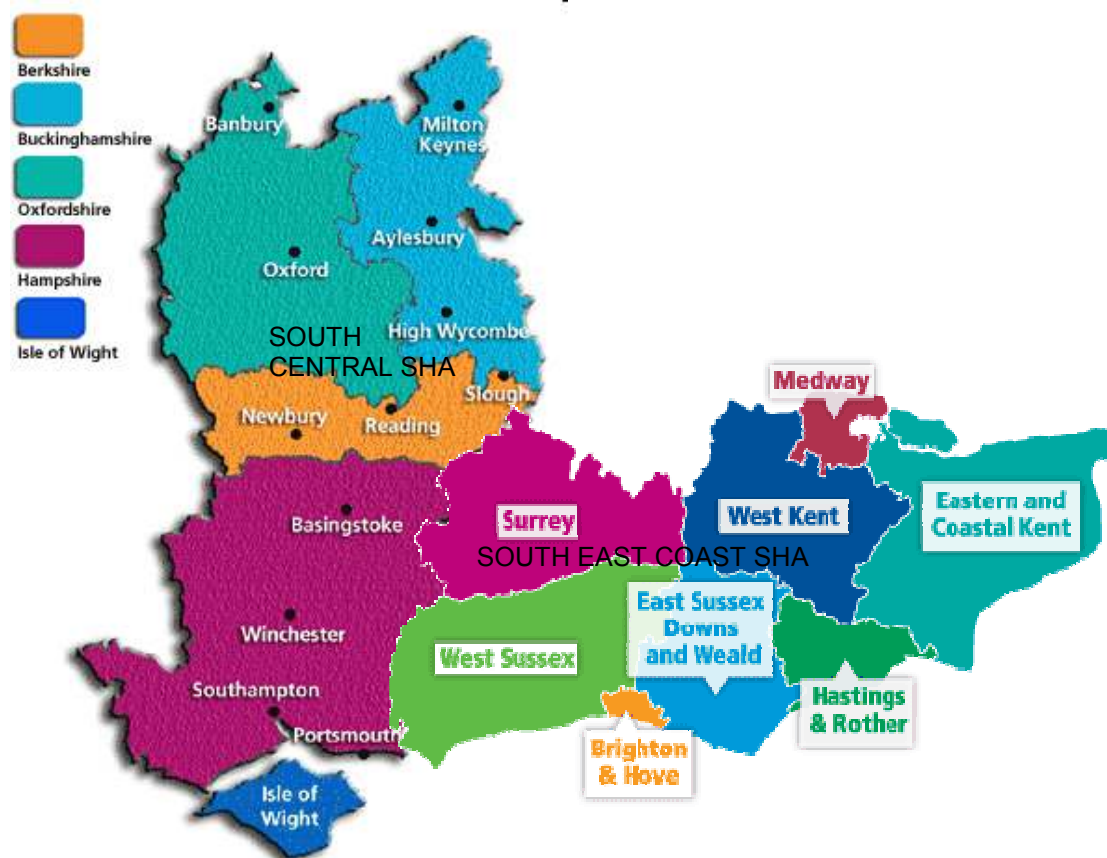
The UK is thus faced with an increasing healthcare burden exacerbated by a decrease in the numbers of the economically active. Traditional health and care models are neither economically sustainable, nor meeting increased consumer demand and expectations.

2 Overview of Care Provision

Currently, care is delivered through several disparate, autonomous public and private bodies, each with their own separate aims, independent budgets and differing responsibilities. This may result in fragmented and complicated service delivery, requiring the user to access a number of local departments or offices. Difficulties in co-ordinating funding between the relevant public bodies may lead to a postcode lottery of service provision.

2.1 Healthcare – Two Strategic Health Authorities

The South East region has two Strategic Health Authorities (SHAs); South Central (population 3,922,301) and South East Coast (population 4,187,941).



Each individual SHA has published aims for care of those with Long-Term Conditions. Responsibility for local commissioning of health services is held at locality level by Primary Care Trusts (PCTs), which are usually co-terminus with and work closely with local councils and unitary authorities.

(N.B. the information below has been extracted from the SHA's websites):

2.1.1 South Central SHA

Including Berkshire, Buckinghamshire, Oxfordshire, Hampshire and Isle of Wight.

- By 2010 health and social care will be jointly planned and purchased for LTCs so that people will receive care that is tailored to their needs
- By 2011 90% of patients with LTCs will have personal care plans
- By 2012 all patients will receive ongoing support, education and training to help them better manage their own condition.

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2.1.2 **South East Coast SHA**

Including Surrey, Sussex, Brighton and Hove, East Sussex Downs and Weald, West Kent, Hastings and Rother, Eastern and Coastal Kent, and Medway.

- By 2010 health and social care to be jointly planned and purchased for LTC's so that people will receive care that is tailored to their needs.
- By 2011 90% of those with LTCs will have personal care plans.
- By 2010 all patients with LTCs and their carers will be offered ongoing support, education and training to help them better manage their own condition.
- Supported disease-specific clinical networks across healthcare, social care and third sector will be developed.
- Working with the NHS and employers to rehabilitate people of working age so that they return to work at the earliest opportunity.

2.2 **Social Services – Eight Counties**

There are eight county Social Service departments, each separately planning for and providing the care of those with LTCs (N.B. the information below has been extracted from the County Council websites):

2.2.1 **Berkshire:**

- Preparing to meet the challenge of an ageing population and increasingly complex care needs as medical advances lead to more people surviving serious health problems.
- Focus on re-ablement, supporting people to be more independent, using more technology to assist people at home (Telecare).
- Developing personal budgets.
- Planning for change - four themes: the market, partnership, prevention and self-direction.

2.2.2 **Buckinghamshire:**

- 'because Every Adult Matters' - enhancing services to enable vulnerable adults to maintain their independence, including the use of telecare.
- Providing assistance to individuals to make their own care choices and guiding them through the process with the option for Direct Payments and Individualised Budgets.

2.2.3 **East Sussex:**

- Running initial trials of Personal Budgets in 2009 in order to have the system fully up and running across the county by 2011.
- Helping people live as independently as possible in their own homes including providing equipment, adaptations and telecare alarm systems.

2.2.4 **Hampshire:**

- Drum Housing is currently piloting the use of Telecare in East Hants and it is likely that the way for the future will be to further develop assistive technology.
- All providers of supported housing for older people will need to be considering the benefits of using Telecare for their service users.

2.2.5 **Kent:**

- Promoting the development of multi-agency care packages to address the needs of people with complex needs living in their own homes – this will require partnerships in planning and delivering such services.
- Further developing innovative schemes to support people in their own homes with new technology which gives added security and confidence, such as telecare.
- Arguing the case for designed-in adaptability and flexibility of all new build – the “lifetime homes” standard.

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2.2.6 **Oxfordshire:**

- Providing specialist equipment, such as mobility aids and alarm systems, to help people with physical disabilities remain in their own homes.
- Social & Community Services has developed a Telecare system which provides a pendant alarm and/or a range of sensors which monitor risks and hazards in a person's home.

2.2.7 **Surrey:**

- The county council's SMART House features a wide range of equipment to help older and vulnerable people to live independently in their own home – one of Surrey County Council's key priorities
- The priority is to equip vulnerable residents and staff to ensure that more people can be cared for in their own home - reducing the cost to the taxpayer and providing the type of support that vulnerable adults want.

2.2.8 **West Sussex:**

- Direct payments enabling people with a long-term illness or disability to pay for help that they can choose themselves.
- Assessments involving placing discreet pieces of equipment around a person's home which the community care line providers will then monitor.

2.3 **Unitary Authorities**

As well as the county councils, there are also 12 Unitary Authorities in SE England covering some cities, large towns and groups of neighbouring towns. UA's fall within geographical counties, but stand alone from county councils. They are independent of the county council and have responsibility for social care provision in their area. In the provision of primary care health services, they are usually co-terminus with PCTs within their area.

There are 6 UA's within Berkshire:

2.3.1 **West Berkshire:**

- The Home Care Service provides support to enable people to remain in their own homes as independently as possible.
- Assistive Technology - e.g. equipment to warn if the gas is left on, medication reminders and a wide range of other equipment

2.3.2 **Reading:**

- Supported Living programme helps vulnerable people to live more independently.
- Telecare technologies available include: environmental sensors, health sensors, medication sensors.
- Currently piloting Self Directed Support (SDS): service users go through a self or supported assessment to identify their support needs and wishes; the UA calculate the budget for the support they need; the service user decides how they want their support needs to be met, within the budget identified and choose how they want their services to be arranged and paid for.

2.3.3 **Wokingham:**

- Home care services ensure that individuals have a care plan.
- Long-term support services maintain and support people with dementia, and their carers, who are identified as being at particular risk of breakdown within the community, and prevent their admission to institutional care
- An assistive technology service provides information and advice to enable vulnerable people to remain independent in their own homes. The range of technology includes: personal pendant triggers; bogus caller buttons; falls, smoke and flood detectors.

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2.3.4 Bracknell Forest:

- Home Support Services support people in the community for as long as is practical and safe to do so. Access to services is via a social care assessment:
- Older people may need help to maintain their lifestyle.
- Young physically disabled people who, through either ill health or accident, may need assistance, either temporarily or permanently.
- Help is offered to service users suffering from dementia.
- Support is also provided to carers.

2.3.5 Windsor and Maidenhead:

- Home Care Assessment - a care manager/social worker completes an assessment of an individual's needs; where relevant, a friend or relative may also receive a Carer's Assessment. A personal service user plan is developed.
- Supporting People - helps vulnerable people to have a good quality of life by providing support services that enable them to live as independently as possible in their own accommodation.

2.3.6 Slough:

- Self directed support is running as a pilot scheme
- Telecare is available through a scheme called Careline.

Buckinghamshire has a unitary authority representing:

2.3.7 Milton Keynes:

- Need assessments are made in consultation with service user: carer's assessment is also available.
- Home adaptations may be available for assisting service users to live independently.

East Sussex has a UA representing:

2.3.8 Brighton and Hove:

- Home Care Services enable people to live independently.
- CareLink Telecare is able to offer a range of sensors helping you to manage risks within the home: environmental sensors, personal risk monitoring e.g. falling, seizures, medication reminders etc

Hampshire has 2 UAs:

2.3.9 Southampton:

- Needs assessment may result in assistive living home adaptations.
- Careline home monitoring is available.
- A range of telehealthcare equipment from leading providers of social alarm and telehealthcare services may be provided. E.g. intellilink base unit, carer alert, care sensor, flood detector, heat detector, low temperature sensor, bed exit monitor, door exit monitor, fall detector, pir inactive/intruder detector, 'Just Checking' dementia assessment kit.

2.3.10 Portsmouth:

- Independent Living Service to help people live independently.
- A community alarm service.
- Telecare initiatives include: pilot schemes in falls management and medication management; introducing Telecare sensors in addition to the home hubs; freestanding assistive technology e.g. memo-minders, pill dispensers; Telecare demonstration / marketing facility at Age Concern's Bradbury Centre; Telecare assessments being included in more social care assessments and in joint commissioning strategies and local service development plans.

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2.3.11 *Isle of Wight:*

- Recognising that people prefer in most cases to have the support they need in their own homes and shaping services with that in mind.
- Telecare installation began in 2008 and mainstreaming the service is well underway.

Kent has a UA representing:

2.3.12 *Medway:*

- Medway Council's care management service works towards keeping service users as independent as possible.
- The SMART home initiative, piloted in 2004, is supporting older people and offering alternatives to traditional methods of residential care. The rolled out scheme uses a range of telecare sensors to look after people in their own homes, helping them to remain independent for longer.

(The report authors are very grateful to Chris Hawker of Southampton City Council for providing detail of the Unitary Authority system and its links to PCTs, county councils etc).

2.4 **Central Surrey Health - a New Social Enterprise Model for Care Delivery**

Central Surrey Health is a not-for-profit, limited-liability company under contract to provide community nursing and therapy services on behalf of the East Elmbridge and Mid Surrey Primary Care Trust. The contract is similar to those held by GP surgeries (a specialist medical services contract).

Central Surrey Health is a social enterprise - which means it exists to serve the community. This model of healthcare providers is endorsed by the Department of Health which says that they 'bring strong engagement with patients and the public, greater ownership and involvement by staff and... the ability to adapt swiftly to meet changing needs.' (Department of Health policy guidance, July 2006)

Central Surrey Health employs around 650 staff who formerly delivered community nursing and therapy services from within the PCT. They are: district nurses, community hospital nurses, school nurses, specialist nurses, health visitors, nursery nurses, physiotherapists, podiatrists, dieticians, speech and language therapists, occupational therapists, support and administrative assistants. On transferring to Central Surrey Health all staff were presented with a single share in the company. As co-owners, they are responsible for delivering patient services and shaping the company's future.

2.5 **Social Security – Department of Work and Pensions (DWP)**

Funding for those with personal care needs comes from the Department of Work and Pensions. There are various allowances available:

Attendance Allowance, sometimes referred to as AA, is a tax-free benefit for people aged 65 or over who need help with personal care because they are physically or mentally disabled. Attendance Allowance may be claimed if:

- there is a physical or mental disability, or both
- a disability is severe enough for a carer to be needed
- the individual is aged 65 or over when they claim

If under age 65, the individual may also be eligible for Disability Living Allowance. Attendance Allowance is not usually affected by any savings or income.

Disability Living Allowance - sometimes referred to as DLA - is a tax-free benefit for children and adults who need help with personal care or have walking difficulties because they are physically or mentally disabled. Disability Living Allowance may be claimed if:

- there is a physical or mental disability, or both

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- a disability is severe enough for a carer to be needed or produces walking difficulties, or both
- the individual is under 65 when they claim

Carer's Allowance is a taxable benefit to help those who look after someone who is disabled. They do not have to be related to, or live with, the person for whom they care. They may be able to get Carer's Allowance if they are aged 16 or over and spend at least 35 hours a week caring for a person who gets either:

- Attendance Allowance
- Disability Living Allowance at the middle or highest rate for personal care
- Constant Attendance Allowance at or above the normal maximum rate with an Industrial Injuries Disablement Benefit
- Constant Attendance Allowance at the basic (full day) rate with a War Disablement Pension

Specialist equipment and adaptations can make it much easier for an individual to live independently in their own home. The equipment available ranges from large equipment like stair-lifts and hoists to smaller gadgets designed for people with specific disabilities. The individual may have to pay for the equipment themselves. However, if a piece of equipment will meet a need that the local council has assessed and identified, then direct payments may be used to pay for or towards it.

2.6 Private Sector

(Information and statistics from the 'Sustainable Social Care Procurement' report by Anne Hartnell, SESCA and SEHTA, funded by SEEDA, March 2009: for the full report go to <http://www.sehta.co.uk/files/SSCPReport.pdf>)

The private sector is the major provider of care services in the South East. The vital statistics:

- 92% of all care services are delivered by the independent sector
- 5,500 care providers in SE
- 113,000 full-time employees
- £10.16 billion annual revenues

Care home & nursing services:

- 4% owned by the statutory sector, and
- 94% run by the independent sector, of which
- 13% are voluntary organisations.

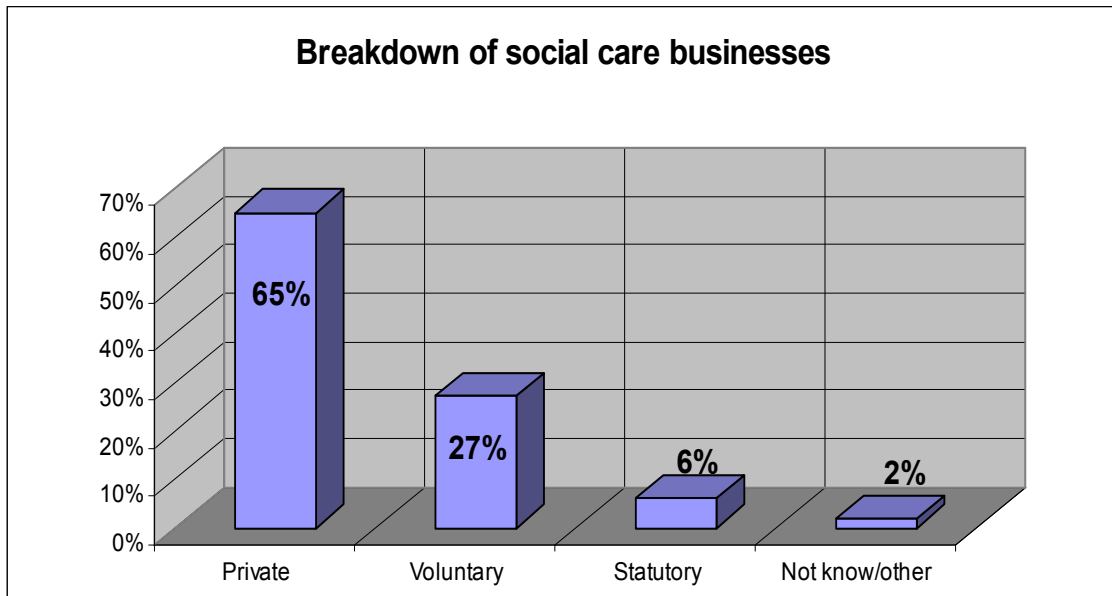
Domiciliary care:

- 13% are run by the statutory sector, and
- 95% operate in the independent sector, with
- 73% of these providers being privately owned &
- 12% run as voluntary organisations

As a percentage of turnover:

- 23% of businesses rely on local authority commissioning for between 76 - 100% of income.
- 24% of providers are generating 25% or less of their business from self-funders.
- 21% are generating between 76-100% of their turnover from this market.

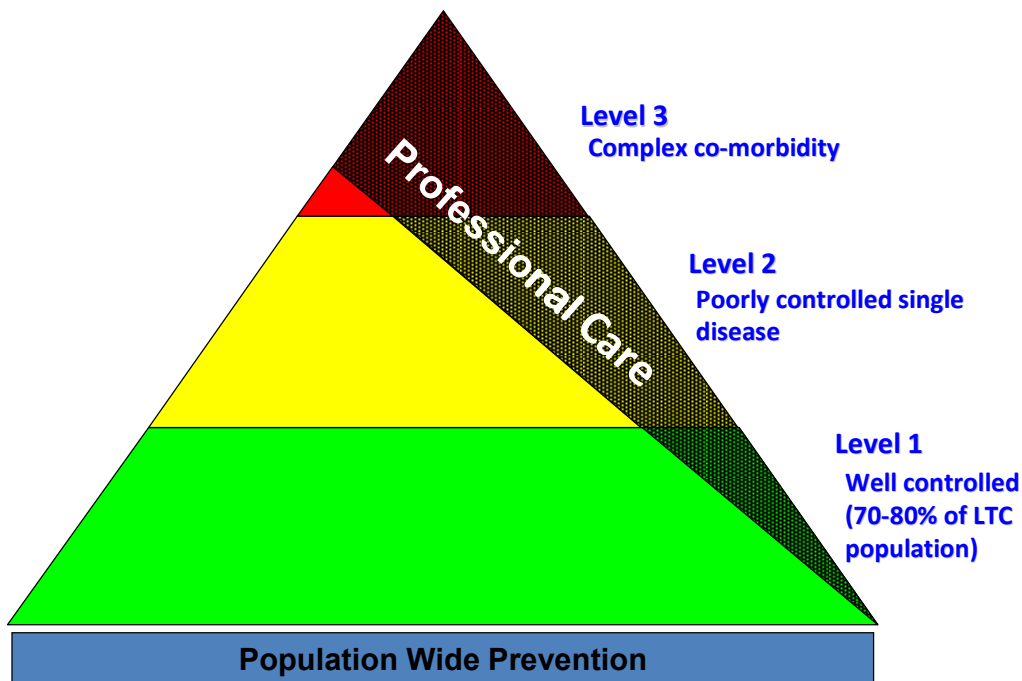
Commissioning from the health service reflects a higher level of small purchases from a large number of providers (35% of the sample). Higher volume purchasing is low and only 3% of providers rely on 76 - 100% health contracted business.



3 Profile of Current Care Delivery

In the UK it is estimated that there are 17.5 million people with LTCs. Their care needs vary according to the severity of their condition from mild, well controlled symptoms requiring little care from the statutory services, through to those with severe symptoms. In a care service where there is already a degree of rationing those in most need rightly get the biggest share of the services available from the statutory sector. The situation can be represented as a triangle, as shown in the figure below, with increasing care intensity on the vertical axis and the numbers receiving care on the horizontal axis. The percentage receiving professional care is highlighted on the same figure.

INTENSITY OF CARE



The increase in the number of older people and the consequent increase in service demand has led the statutory services to develop the use of technology to assist in the delivery of care – referred to as telecare. The next four sections summarise the activity in the area of telecare, government support to telecare, the private sector telecare market and the lessons learnt.

The focus has been on those with highest need and the approach has been to “prescribe” telecare as if it were some form of intervention. This is a perfectly reasonable approach, but there is little opportunity for preventative care. If future demand on the statutory services is to be reduced, then a means must be developed of addressing those with mild and moderate symptoms and those who are currently healthy, but have a predisposition to LTCs. Prescribed telecare which is delivered post diagnosis is not the answer. The government is of course aware of this and has started a few initiatives (described in Appendix 3) in the area of self-managed care. The new focus and the next generation of services should support individuals to manage their lifestyle and any health and social care problems they may have. We refer to the use of telecare in self-management as elective telecare, which people would choose to adopt before they become eligible for statutory care.

4 Technology Usage in the Delivery of Care - Telecare

Using technology to help deliver care is not new. For over 30 years the Community Alarm Service, CAS (which provides a radio pendant linked via the telephone to a call centre) has been and is still available. When the concept of providing more services into the home was first developed, it was natural to use the existing CAS, or something like it, as the basic infrastructure. These additional services, starting with extra safety and security services, became known as telecare.

When it was realised that health monitoring services could be provided in the same way the term telehealth came into existence. In our opinion telehealth is a component of telecare, as the basic service is one of care and support and the user does not distinguish between the two.

We therefore describe telecare as ‘the use of information and communication and sensor technologies to deliver health and social support to people to help them live as independently as possible in the lowest intensity care setting consistent with their needs and wishes’.

Trials of telecare started with quite ambitious aims of demonstrating clear hospital and residential home admission avoidance, healthcare gain amongst the major LTCs (diabetes, chronic obstructive pulmonary disease, chronic heart disease and dementia) and improved quality of life. Significant government spending (see next section) coupled with Local Authority and PCT spending has resulted in almost every LA and PCT having a trial or a small scale telecare service. The Telemedicine and E-Health Information Service (www.TEIS.port.ac.uk) gives information on some of the trials that have taken place across the UK. As part of this report, University of Surrey have completed a comprehensive survey of telecare activity, in the UK and abroad, and this is available as Appendix 1.

Early trials were not rigorously evaluated, although that situation is now changing. As a consequence, clear evidence of cost savings and care gains are still not available, although a number of lessons have been learnt:

- Delivery of telecare services is complex and currently not well integrated.
- Delivery requires an integrated service involving multiple stakeholders across private and public sector.
- Current pilot schemes in telecare/assisted living lack coherence, limiting the transfer of knowledge and best practice between pilot schemes.
- Systems for telecare are not currently standardised and lack interoperability.
- User compliance and adherence with prescribed telecare technology is not always satisfactory.
- Perceived invasion of privacy and distrust of data security may prevent uptake of proposed telecare services.

The Whole System Demonstrator programme, referred to in the next section, seeks to rectify the shortcomings of previous trials through large random controlled trials with robust evaluation.

5 Government Initiatives

5.1 Initiatives in Telecare for Long Term Conditions

Government initiatives in this area have developed since 2006. In that year the white paper “Our health, our care, our say” was published after wide consultation. It included the concept of “providing care closer to and at home”. In the same year the Preventative Technology Grant (PTG) was made available to Local Authorities (LA) in England to “initiate a step change in the design and delivery of health, social care and housing services and prevention strategies”. Similar grants were made available in Wales and Scotland. The PTG grant was available until 2008.

Started in 2007, the Department of Health (DH) is running a £31m Long Term Conditions Whole System Demonstrator (WSD) programme. This will:

- explore integrated health and social care working supported by advanced assistive technologies
- lead to a better understanding of the level of benefit associated with such developments
- help fast track future change by addressing the key implementation barriers and providing solutions for the wider NHS and Social Care services.

Following a competition for the funds, WSD pilots are being implemented in London Borough of Newham, Kent and Cornwall, the sites having been chosen to study the use of telecare in different care environments. The implementations are being evaluated by several academic groups. Meanwhile, the unsuccessful bidders have formed the WSD Action Network.

Local Authority Adult Services departments are increasingly becoming central to the development of telecare service delivery, a fact recognised by DH making c£500m of Social Care Reform Grant available for the development of infrastructure to deliver personalised services. These activities are supported by a broad range of functions within the local authority e.g. local housing development and management, internal IT services etc.

UK industry and research communities are active in this area and supported by the Technology Strategy Board's Assisted Living Innovation Platform (ALIP), a further £50m of funding, the aim of which is to significantly advance the technology to meet the demand for independent living from those suffering from chronic conditions. ALIP supports new technologies, such as point of care diagnostics, but also extends to examining service and market models. It also closely supports the WSD programme.

5.2 Initiatives in Self-Managed Care

Appendix 3 details several government initiatives in the area of self-managed care which are relevant to the future of telecare service provision.

5.3 Related Government Initiatives

Digital Britain:

The Government has recently published an interim report on the requirements for development of the UK's digital infrastructure. Clearly telecare, with its requirement for robust digital communications networks, is an application area in which this agenda is particularly relevant. The 'Digital Britain' document highlights five objectives:

- Upgrading and modernising our digital networks – wired, wireless and broadcast – so that Britain has an infrastructure that enables it to remain globally competitive in the digital world
- A dynamic investment climate for UK digital content, applications and services, that makes the UK an attractive place for both domestic and inward investment in our digital economy
- UK content for UK users: content of quality and scale that serves the interests, experiences and needs of all UK citizens; in particular impartial news, comment and analysis
- Fairness and access for all: universal availability coupled with the skills and digital literacy to enable near-universal participation in the digital economy and digital society
- Developing the infrastructure, skills and take-up to enable the widespread online delivery of public services and business interface with Government.

In relation to existing and Next Generation Mobile Wireless Networks, a Wireless Radio Spectrum Modernisation Programme is being specified and consists of five elements:

- Resolving the future of existing 2G radio spectrum through a structured framework, allowing existing operators to re-align their existing holdings, re-use the spectrum and start the move to next generation mobile services.
- Making available more radio spectrum suitable for next generation mobile services.
- Greater investment certainty for existing 3G operators
- Greater network sharing
- Commitments by the mobile operators to push out the coverage of mobile broadband eventually to replicate 2G coverage and mark their significant contribution to the broadband

The Information Age Partnership (IAP) is set up as a partnership for action between industry and Government, comprising Ministers and Chief Executives of the UK's leading IT, Electronics, Communications and Content companies. The purpose of the IAP is to ensure that ICT is effectively deployed to accelerate innovation and productivity growth across the economy and to impact directly on the priorities of small and medium sized businesses. This helps the UK to take maximum global advantage of the technological, economic and political developments that characterise the information age and can drive the UK's economic recovery.

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New Industry, New Jobs

The DIUS (now DBIS) policy statement "Building Britain's Future - New Industry, New Jobs" identifies key areas where Government action can have most impact, investing in growth to speed recovery and building manufacturing and services essential to ensure British people and businesses can compete successfully for the jobs of the future.

Key areas identified for immediate action and reform to win a bigger share of the opportunities ahead are centred on innovation, skills, finance, infrastructure and trade. They include:

- making sure high growth, high innovation firms get the financing they need
- more support for exporters by enhancing the role of UK Trade and Investment and the Export Credits Guarantee Department
- more support for turning bright ideas into products that win in the marketplace by building the Technology Strategy Board into a world leader and making sure we maximise economic opportunities from the work of our university researchers
- improving our ability to identify the skills needed for future success and making sure the education and training system delivers them
- smarter, more joined-up Government that understands the importance of creating wealth, is better at identifying economic opportunities from the big public challenges facing us (especially moving to a low carbon world) and uses its buying power to support innovation and skills
- a coherent strategy for making sure Britain has the modern infrastructure and networks, from energy to broadband, that will be the foundation of future prosperity
- concerted action to back businesses in markets and sectors where Britain has strength and Government can make a difference by clearing obstacles or correcting market failure

Development of the telecare industry in SE England, nationally and internationally will be a major contributor to the 'New Industry, New Jobs' agenda.

Sustainable growth and development – the 'Green' agenda

The Government believes the UK must take a leading role in developing environmentally friendly industries, arguing that green ambitions do not have to be at the expense of economic growth. Sustainable development covers a very wide range of activities. In the UK, four key areas have been identified:

- sustainable consumption and production: changing the way products and services are designed, produced, used and disposed of – in short, achieving more with less
- climate change and energy – reducing greenhouse gas emissions in the UK and worldwide whilst at the same time preparing for the climate change that cannot be avoided
- natural resources – understanding the limits of the natural resources that sustain life, such as water, air and soil
- sustainable communities – looking after the places people live and work, for example, by developing green, open spaces and building energy-efficient homes

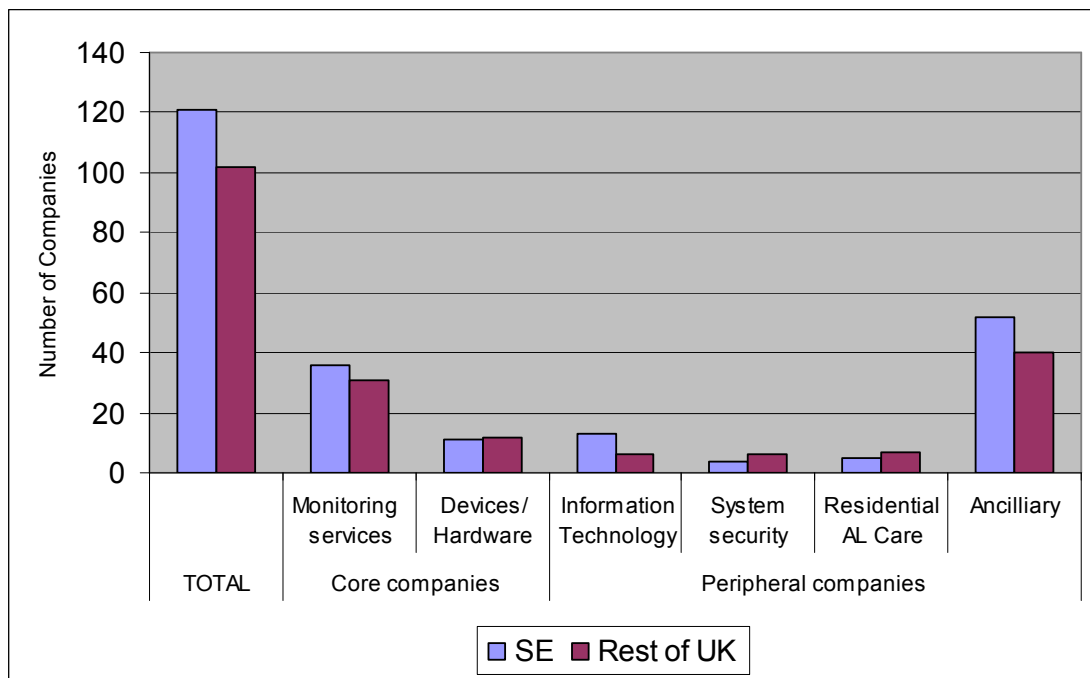
Evidence from pilots schemes in remote monitoring for people with chronic diseases not only demonstrates patient benefit, but also shows up to 63% reduction in transport costs. The development and application of telecare services results in the reduction of travel by both patients and health and social care professionals, helping care providers to meet the requirements of the first two of these key areas of sustainable development.

6 Private Sector Activity in Telecare

6.1 Companies Involved in Telecare

The South East has a greater concentration of companies directly involved in the core and peripheral business of telecare than any other region in the UK. There are 47 core telecare device and service companies in the SEEDA region, with revenue of more than £550 million and employing more than 2,000 people. The SE also has strong sectors in systems security, information technology, telecommunications, health technologies and private care provision, all of which are required to support the principal telecare industry. As a region, the SE is well placed to provide the technologies and services required for integrated telecare services.

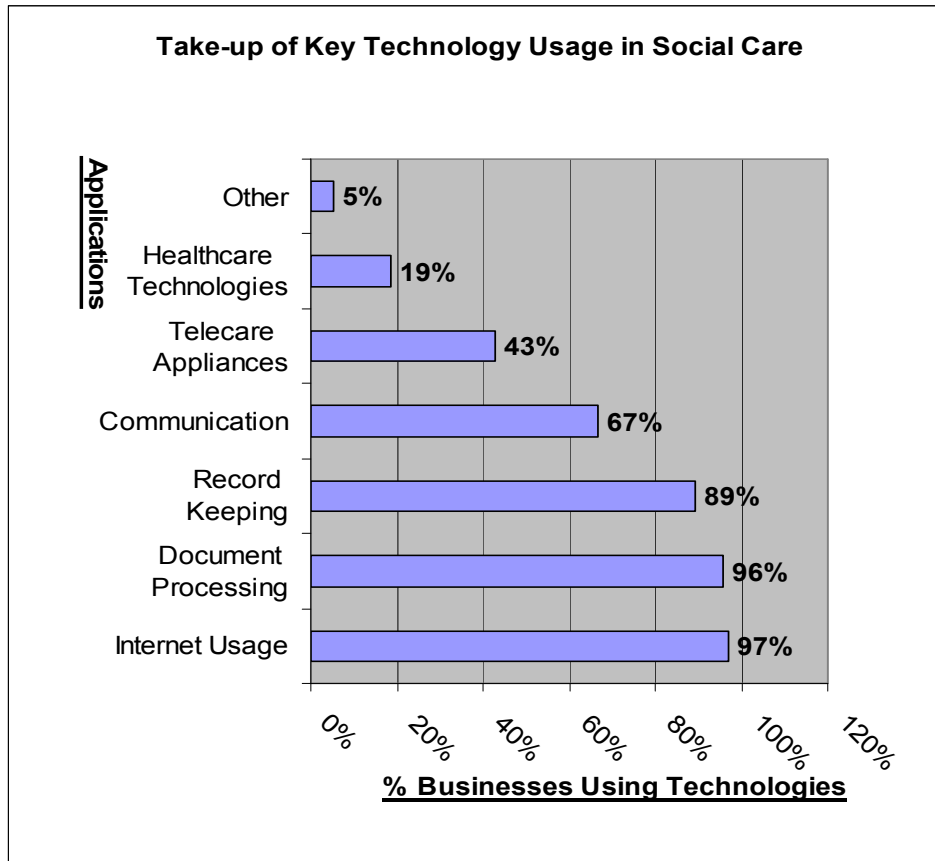
Telecare Companies in SE and Rest of UK							
Region	TOTAL	Core companies		Peripheral companies			
		Monitoring services	Devices/ Hardware	Information Technology	System security	Residential AL Care	Ancillary
SE	121	36	11	13	4	5	52
Rest of UK	102	31	12	6	6	7	40



The information above has been extracted from a comprehensive survey of companies involved in telecare activity undertaken by University of Southampton. This survey is available as Appendix 2.

6.2 Telecare Technology in Private Care Provision

(Information and statistics from the ‘Sustainable Social Care Procurement’ report by Anne Hartnell, SESCA and SEHTA, funded by SEEDA, March 2009: for the full report go to <http://www.sehta.co.uk/files/SSCPReport.pdf>)



Where care-specific technologies have been adopted in private care provision they tend to be basic technologies. These are generally simple appliances such as pill dispensers, movement sensors, community alarms and not what the Telecare industry would necessarily understand as ‘telecare’. Telehealth technologies are mainly used to monitor conditions/diseases e.g. blood pressure monitors, dementia roaming systems.

Service providers may encounter discouragement or barriers to direct adoption of care-specific technologies:

Discouragement by the Commission for Social Care Inspection (CSCI - now the Care Quality Commission), for example:

- providers may be requested not to adopt healthcare technologies, as all equipment should be supplied by doctors or social services.
- telecare use may be deemed to increase “risk” as part of risk assessment.

Local authorities providing disincentives to the independent sector by, for example:

- restricting access to demonstrators and other technologies purchased through public funds but installed in statutory services or local authority premises.
- suggesting that telecare technologies should be used as part of contract management; for example, domiciliary care to be purchased in line with the logged contact time, thus reducing the value of the contract and disregarding the opportunity costs of this type of care (eg travel time etc.).

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- in some statutory services, management's view is that local authorities assess needs and supply telecare/healthcare equipment i.e. 'prescriptive' telecare. This can discourage the collection and use of feedback from the service user and the carer's experiences of using the device.

Positive experiences of applications of technology include:

- Call bell system and alarms, movement sensors, snooze alarm & pressure pads.
- Use of healthcare monitors (eg diabetes, blood pressure).
- Technology for tracking carers (domiciliary care).
- Enabling greater comfort for service users.
- Improving security (alarms), leading to peace of mind for users and families.
- Improving business efficiency and health & safety, when used in risk assessment.
- Meeting CSCI requirements, as the purchases were made to meet specific client needs. (This points to the inconsistencies which arise from CSCI's inspectors with their own views of the value of telecare.)

Opportunities for applications of technology in private care provision include:

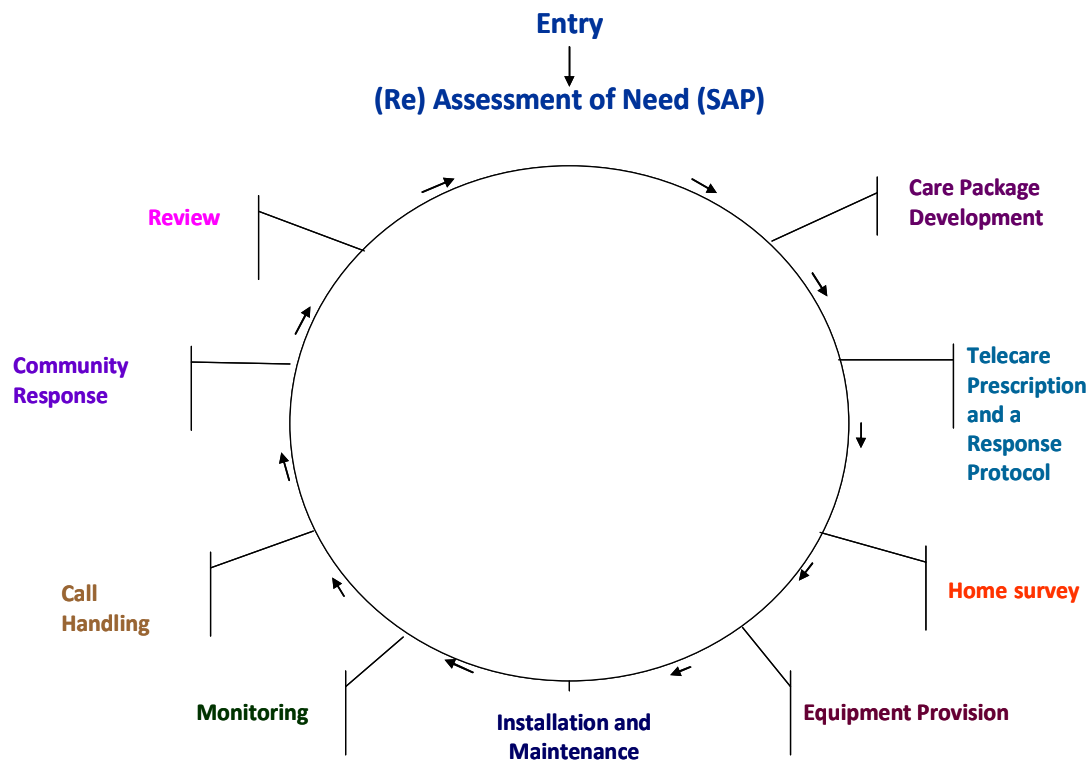
- Dementia applications – e.g. day centre and supported living providers are interested in dementia roaming devices and systems
- Monitoring of conditions such as double incontinence.
- Technology to support epilepsy.
- Telecare that increases the efficiency of care, leaving more time for management.
- Technology that improves the quality of care & supports higher-dependency needs.
- Uses to help people remain in their own homes and, when moving into care, technologies which are both transferable and interoperable.

7 Lessons Learnt

Despite numerous trials of telecare across the UK a unified model for telecare delivery has not emerged. Broadly though, a telecare service breaks down into five components, viz. referral and assessment, installation of the equipment, monitoring, response and review.

These five components can be further divided into ten discrete activities or steps, as shown in the figure below. This section describes each step in more detail. The figure shows how a telecare service is as much about helping to deliver the individual steps, as passing information to the next steps in the process. The figure is therefore both a process diagram and an information flow diagram.

LOGISTICS OF A TELECARE SERVICE



The process of referral and assessment (Step 1) is currently a local matter and this leads to variability across the country. The aim of the Single Assessment Process (SAP) is to provide a standardised system to ensure that a person's needs are comprehensively assessed, that no option for meeting them (within the constraints of what is locally available) is overlooked and that information about the person is available to be shared between different agencies.

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Similarly, the development of the care package (Step 2) also relies on the collaborative working of local health, social services and housing professionals. Telecare must be on the list of options that every health, social care and housing professional has at their disposal when constructing an individual care plan. In the longer term, it has been suggested that potential telecare solutions should be presented as the output of a decision support system that automatically responds to the trigger factors identified through the SAP. This would further embed telecare into mainstream service delivery.

If telecare is prescribed as part of the care package (Step 3) then there are three subsequent actions. Firstly, a list of appropriate equipment must be drawn up, secondly the service response protocol to meet the individual's need must be devised and thirdly the person's informed consent to having this equipment in their home must be obtained. The response protocol must state clearly the response to be made by the monitoring service (Steps 8 & 9) in the event of a request for assistance. It must take into account the person's wishes about, for example, calling their relatives.

Even if telecare is a viable option as part of the individual care package, a home survey (Step 4) may reveal that the home is not suitable for the person unless changes are made. For instance, it may be too cold or there are other hazards. In addition, it may not be technically possible or economically justifiable to install the telecare equipment (or any other assistive technology that might be required) so an alternative will have to be found.

Then the telecare equipment has to be provided (Step 5), installed, set to work and maintained (Step 6) and monitored (Step 7). Equipment may have to be removed at some time as well.

The response of the monitoring service has been divided into two parts. Firstly, the initial response (Step 8) and, secondly, contact with one of a variety of community care teams that can provide an appropriate service in the person's home (Step 9). The initial response is the key to the telecare service. How well a request for assistance is handled will build confidence amongst the users (people in their own homes) and other stakeholders, such as family carers and care professionals. If a telephone call is made to the call centre or a home sensor is activated either by the person or automatically, then a response must be made according to the response protocol developed at Step 3. Normally this will involve direct voice contact between the operator at the monitoring service and the person in their home. On the basis of this call the operator decides how to proceed. If voice contact cannot be established then the operator treats the call as an emergency.

Monitoring, initial response and community responders have been deliberately kept separate in the diagram because it is not likely (or perhaps even desirable) that they be provided by the same organisation. Following the response, there will be a review of the service provision (Step 10) which may result in a complete re-assessment of the person's needs (Step 1).

What cannot be shown in the diagram are the two other important issues of user and family carer education and information collection, storage and dissemination. The users will have to be shown the equipment that will be installed in their homes and the operation of the service will have to be explained and demonstrated. This is sometimes provided through demonstration suites in hospitals and the community.

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In many senses trying to implement telecare has revealed the “fault lines” in the existing community services. Having different professional groups, with separate budgets, acts to inhibit the holistic response required to care for the needs of people trying to live independently. Some of the main findings are summarised below.

- The referral, assessment and supply process is complex.
- One size does not fit all, demanding a high level of skill in the assessor.
- There are products missing from the range of devices available.
- There are no standards (either technical or care) to work to, making it hard to specify user-specific systems.
- The large number of stakeholders makes it difficult for everyone to generate an adequate level of benefit.

But what is emerging is that at a basic level telecare delivers reassurance and support for all stakeholders, increases risk management and provides more efficient use of scarce human resources. However, lack of disinvestment from existing service provision seems to be a barrier to further expansion of telecare services.

Up until now, private sector involvement in telecare has largely been limited to the provision and development of devices and call centres. If telecare is to deliver on its potential, the issues of lack of integration and interoperability of both technologies and services need to be addressed.

However, what is apparent from the interviews and surveys conducted with stakeholders (summarised in the next section) is that, if integration and interoperability problems can be solved, then there is a large potential private sector market in telecare provision, both nationally and internationally. This potential will be discussed further in later sections.

8 Direction of Telecare Development

Interviews conducted with stakeholders from the public and private sectors associated with telecare service provision have highlighted various consistent viewpoints regarding the future of telecare services.

Opportunities:

- **Market Development** - Telecare is increasingly being successfully applied to patients at the high-need end of the care triangle. If these models were applied to those with more moderate need, telecare could postpone or even eliminate their health risks and thus relieve the pressure on stretched resources. Even where unequivocal evidence for cost savings does not exist, benefits experienced by patients, informal carers and service providers could be seen as sufficient requirement for the introduction of telecare services into a system that practises 'social medicine'. This would avoid the need for such stringent justification and speed up service implementation. Private provision of telecare services is a relatively untapped market.
- **Strategy and Funding** - New government initiatives should improve strategies and funding for the implementation of telecare. The focus of SHA's on innovation and improved infrastructure should enable services for LTCs to be rolled out to support healthy lifestyles, delaying or preventing the onset of LTCs. New policies are placing increasing emphasis on maintaining the wellness of the working age population, including applying a telecare infrastructure to achieve this.
- **Technology** - The availability of new web-based, digital, informatics, telecommunications and telecare device technologies will make the development of the next generation of telecare services a possibility. The UK is developing as a world-leader in these technologies, positioning it to better serve not just the domestic market but also export markets. Enhanced design standards should improve users' perceptions of the telecare service they receive.
- **Integration** - Increased integration and interoperability of systems and devices should also improve users' perceptions and provide cost efficiencies in the implementation of telecare services. Co-operation between the public bodies involved in service implementation is increasing and will also enhance the efficiency and efficacy of services provided.
- **Employment** - There are significant employment opportunities in new telecare services, especially for those with experience and skills in using telecare systems and devices. With the potential increase in 'elective' telecare provision, in both private care services and occupational health in the workplace, employment prospects in the sector will expand.

Limitations:

- **Small-scale implementation** - The main limitation to wide scale implementation of telecare services is not the technology, but the tendency towards discretionary pilots and reluctance to invest in the wholesale change necessary, finding the costs through disinvestment.
- **Regulation** - In the UK medical devices and telecommunications are regulated separately. The further development of telecare services requires the integration of the two regulatory systems. The UK can learn from approaches taken in other countries. Regulation needs to be implemented in a manner that does not discourage innovation and facilitates the rapid roll out of services.

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- **Employment** - While employment is seen by some as an opportunity, there is a current projected shortfall in health and care workers. Recruitment and training would need to be improved.
- **Interoperability** - Until there is universal operability the market opportunities will remain limited.

In a recent survey conducted by the Telecare Knowledge Network (TKN) among members of the Telecare Services Association (TSA), some consistent themes emerged regarding capabilities and features that respondents would like to see in the next generation of telecare equipment. These were:

- **User-centred design to improve compliance and uptake** - All devices, both worn and free standing, should be visually attractive and discreet in order not to draw attention to the care situation. Devices should be more portable and non-intrusive, with improved battery life and appropriate functional sensitivity.
- **Universality and interoperability** - Devices and systems should have non-exclusive software and common protocols to improve interoperability. A change in an individual's care requirements should not result in the need for a complete new system to be installed, but rather new devices should be easily added as modules of an existing system, even where different manufacturers are involved. Devices should also be useable outside the home, to allow individuals to live as active a life as possible.
- **Improved human interface** - Speech recognition devices should have increased sensitivity and also improved range from the home hub. Devices capable of translating speech to text and vice versa should be developed. These improvements would assist the socially vulnerable and those with speech or visual impairment.
- **Wellness monitoring/preventative care** - More devices capable of detecting changes in 'wellness' would help identify deteriorating health, preventing critical situations and reducing hospital admissions. (Several pilot studies have shown that individuals whose health is being monitored in this way have less anxiety and more confidence to live a fuller life.)

Summary

The interviews and questionnaires have highlighted four main themes

1. There is still much work to be done on device and system design. The technology is available, though currently not interoperable (this is the major technological barrier to the wide-scale implementation of telecare).
2. Telecare services for people with moderate needs should be designed and implemented (this would support other Government initiatives in self-managed care).
3. Telecare services could be provided by the existing private care sector, who may find it easier to manage the organisational changes associated with telecare
4. Consideration should be given to how telecare technologies and infrastructure could support the working age population.

The report authors are very grateful to all the interviewees and survey respondents for giving their time so generously.

9 New Telecare User Profile

The people in the lower sections of the care triangle (see figure on p.13) do not see themselves as “patients”, but as people who on occasions need help and support from the statutory services to help them manage their LTCs. Most of the time their support comes from families, from extended families, from peer groups and from communities. For periods they are in need of extra assistance because their health breaks down or, for some reason, they need more care than their social networks can provide. They would like to request the amount of help and support that they want, when they want it, which then allows them to get on with their lives. “Getting on with their lives” could mean minimising time taken off work or enjoying the early years of their retirement.

Being the carer of someone with a LTC (e.g. partner of someone with a LTC, children with elderly parents with LTCs, or parents of children with LTCs) puts a considerable burden on the informal carer. There is a requirement on the carer to be informed about the specific long term condition that they are supporting and the services that are available to help them and the person they are caring for, such as respite care.

In this report we will refer to such patient-selected services as elective telecare, as the person chooses to access it, in contrast to prescribed telecare which is available from the statutory services, once one has reached a certain level of need.

10 Elective Telecare Service Profile

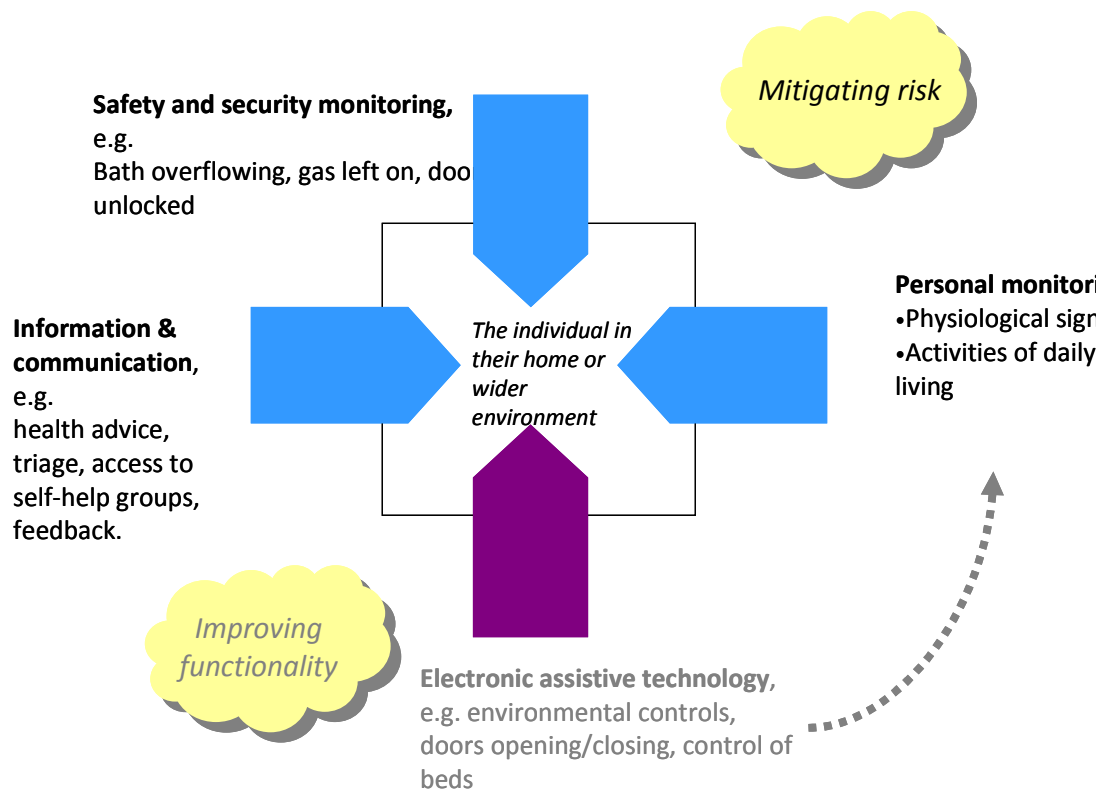
An elective telecare service needs to provide for:

- Social inclusion and connectivity
- Mobility and choice
- Behavioural change support
- Care and lifestyle monitoring
- Condition specific information
- Access to therapies and named carers

The person, or their informal carer, is probably not going to need all these components simultaneously, but in a comprehensive elective telecare service they must be there. The technology to deliver such a comprehensive service is available and many of the components have been trialled individually in the pilot telecare projects that have been conducted up till now. The innovative step is to provide them on a single platform with a user interface that is simple and intuitive.

Diagrammatically such a service can be shown as:

COMPONENTS OF A TELECARE SERVICE



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The previous diagram shows four components. Safety and security monitoring and individual physiological monitoring have both been the subject of telecare trials over the past few years. The sensors are always under development to improve the sensitivity and specificity of the monitoring. Together these two components will contribute to mitigating the risks of the person adopting as independent a lifestyle as they are able. Possibly the most useful and important component of an elective telecare service is the information and communication channel that is available. There is a plethora of delivery channels and interface devices available to provide this component of the service. The individual would probably start with this component of the service. The other two components will be delivered through this same channel, as well as and when required. The fourth component is electronic assistive technology which is currently a different statutory service provision and so not included in the recent trials of telecare. It consists of devices that operate exclusively within the home and do not communicate outside of the home such as temperature and light sensitive window closure mechanisms. Many of these devices are becoming retail items. Together electronic assistive technology and information services will contribute to improving the daily life of the individual.

Although the statutory services are not involved in elective telecare, the same service delivery supply chain is required as for prescribed telecare (see figure p.21 – Logistics of a Telecare Service), although there are some differences. Referral is by the individual and there is self assessment. The response could be through many groups, other than the statutory services, such as neighbours, family, or the voluntary sector. Elective telecare offers the prospect of a new business model where there are funding sources such as housing providers, care companies, equipment companies, the individual and informal carers, entertainment and information service providers and the voluntary sector, in addition to the statutory sector. Elective telecare would be an opportunity for public/private partnership in care provision with a seamless transition as an individual's needs increased.

11 Developing New Telecare Products and Services

Strategy and Funding

The considerable amount of money spent and the resources expended by Department of Health, Local Authorities and PCTs has shown the way forward for telecare development. To reduce the unsustainable demand on already hard-pressed health and care services, there is a need to continue with the development of prescribed telecare and start the development of elective telecare. These are considerable tasks as there are technological, organisational and societal challenges to face, but the rewards and benefits will be felt by individuals, companies, institutions and government. This will only be achieved through the collaborative effort of appropriately constructed consortia of academia, industry and the statutory services coming together to identify thematic areas for study, write the product and service specification, address the development issues and implement the new services. The role of national and local government is to provide the infrastructure to allow this to happen and to provide initial funding, which will enable other funding to be leveraged. Initial funding from SEEDA could catalyse market areas where industry is not yet able to make a business case. A summary of current further funding sources in the area of telecare is given in Appendix 4.

Integrating TeleCare into TeleServices

The key to developing new telecare services will be the integration of telecare delivery into existing networks and infrastructures that individuals already use, or will soon be using, in their everyday lives. Innovation will be achieved through coupling with broader, but similar, teleservices. Linking telecare with other teleservices will also, by necessity, accelerate the resolution of specific integration and interoperability issues in current telecare services and technologies.

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Potential Teleservices Infrastructure



(Diagram developed by Brainport Foundation, The Netherlands, during collaboration with Southampton City Council and Southampton City PCT on telecare development.)

The diagram above shows a variety of home teleservices. Some of the services are already available, such as home banking and home shopping, but there are opportunities for development. The concept of elective telecare services links together the areas of Contact, Healthcare and Safety shown in the diagram. Elective telecare also includes the important area of assistive technology which is vital if people are to remain in their own homes (See section 10). The provision of energy teleservices to the home in the UK will be through the provision of smart meters. This presents an exciting opportunity for the delivery of all teleservices to the home, as the smart meter network will provide an alternative to other telecommunications networks accessing the home, such as digital TV, phone (fixed and mobile) and broadband. However, if elective telecare is to become part of everyone's life and truly ubiquitous, then its delivery cannot be restricted to the home. Delivery platforms that operate equally in the home and on the move will be required.

12 Three Suggested Thematic Areas

The summary of Section 8 identified the major technology challenge of interoperability in telecare and three application themes. Developing new interoperable products and services in the three thematic areas will, of itself, address the major technological challenge. The three themes are detailed below, one in the area of prescribed telecare and two in elective telecare. All three themes fall outside the scope of existing statutory services and, therefore, represent enormous opportunities for private sector provision.

12.1 Prescribed telecare

1. This report highlights that a considerable amount of out-of-hospital care (both care homes and domiciliary care) is provided by the private sector. The providers range from small family run businesses through to multi-national companies and the sector is growing. Until now these providers have not been involved with telecare. A thematic area for study could be “telecare and the care home sector”

12.2 Elective telecare

2. A large number of those with LTCs do not receive care from the statutory services, but do get support through their own ad hoc networks. They may ultimately need statutory service care, though. An elective telecare service offers them the opportunity to supplement their other networks whenever they require and to facilitate the transition to prescribed telecare if they need it. The ad hoc networks they rely on are themselves composed of individuals who need similar support, so the requirement for elective telecare services is considerably larger than just for those with a LTC. Within that group there are several sub groups, such as those with particular physical or mental conditions e.g. osteoporosis and learning difficulties. If their condition changes, for whatever reason, they may still not qualify for statutory services but will need additional support, which would not be available to them without an elective telecare service. We refer to those in these groups as fragile individuals or fragile communities. A thematic area for study could be “networks of support for fragile individuals”.

3. Many of those with LTCs are of working age. The government has for a long time recognised the loss to the community because there is no easily accessible service particularly for employees of SMEs which can support an individual to return to work or help them balance the demands of work and a LTC. A thematic area for study could be “a fit for work service provided by employers”

13 Opportunities and Challenges in the South East

These thematic areas could potentially be developed anywhere, but a SWOT analysis of the use of technology in health and social care in South East England reveals a large number of strengths and opportunities specific to the area, whilst the weaknesses and threats largely hold true for any region seeking to develop telecare.

13.1 Strengths

European, national and regional Government are committed to improvements in healthcare services. The UK Department of Health (DH) is running a 'whole system demonstrator' (WSD) programme, evaluating assisted living services in a controlled 2 year trial. It is the largest trial of its kind ever undertaken and comprises 3 managing sites involving dozens of doctor's practices and over 6,000 patients. One of these WSD trials is running in Kent, in the SEEDA region.

- Several other pilot schemes in assisted living/telehealth are running in SE England.
- The estimated potential market in SE England alone for telecare services is currently approx £1.1billion p.a.
- There are 47 core telecare device and service companies in the SE, with revenue of more than £550 million.
- The South East has a greater concentration of companies directly involved in the core and peripheral business of telecare than the rest of the UK.
- SE England supports a cluster of most of the world's biggest telecommunications companies (necessary for telecare service delivery).
- The SEEDA region possesses a broad range of relevant expertise e.g: manufacture of computers and other information-processing and electrical equipment; 'smart' medical, surgical, orthopaedic appliances; telecommunications; software and hardware consultancy etc.
- The region contains all necessary links in the relevant supply chain.
- SEEDA has a dedicated sector consortium (SEHTA) supporting the health technologies industry.
- Many SE councils work closely with health service counterparts on developing joint approaches to local telecare/health services (e.g. Southampton)
- The SE has a large private care sector comprising 5,500 care providers, with a recently incorporated representative body – South East Social Care Alliance (SESCA).
- 17 universities in SE region are involved in telecare research.

13.2 Weaknesses

- The required investment for systems and technology for telecare services is significant.
- Delivery of telecare services is complex and currently not well integrated.
- Delivery requires an integrated service involving multiple stakeholders across private and public sector.

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- Procurement is complicated; access to the NHS/social service commissioners is difficult for telecare companies and private sector procurement is fragmented.
- Current pilot schemes in telecare/assisted living lack coherence, limiting the transfer of knowledge between pilot schemes, experts in the field and other stakeholders.
- Systems for telecare are not currently standardised and lack interoperability.
- High speed internet access, on which telecare is dependent, is not always available.
- Those in most need of telecare services, e.g. the elderly or disabled, may not have access to or familiarity with the necessary technologies e.g. internet.
- User compliance and adherence with prescribed telecare technology is not always satisfactory.
- Perceived invasion of privacy and distrust of data security may prevent uptake of proposed telecare services.

13.3 Opportunities

- Multiple factors are combining to push the telecare agenda forward.
- There are numerous government policy and funding initiatives in telecare.
- Telecare is a growing research area creating a potential pipe-line of superior next generation technology, as well as systems to improve user compliance and adherence.
- Representative bodies in the sector are forming and collaborating e.g. SESCA, SEHTA, TKN (Telecare Knowledge Network), TSA (Telecare Services Association), Health Technologies KTN, Security KTN etc.
- Privacy and trust issues will bring to the market expertise and suppliers from other sectors, improving service integration and uptake.
- The market for telecare technologies is expanding due to age and chronic health demographics in SE, attracting new companies into the telecare arena, encouraging innovation and improving competition in the industry. These age and chronic health demographics are similar worldwide, creating a global market opportunity.
- The market for 'elective' rather than 'prescriptive' telecare, for those with minor or no LTCs, is also growing. This market exists outside NHS provision and may be easier for telecare companies to access.
- This 'elective' market is not supported by statutory services, therefore there is a realistic opportunity for the private sector with a convincing business case.
- Individuals with private or 'personal health' budgets will have more influence on their telecare provision and this will drive the market.
- Next generation telecare technology will be 'elective', smarter, more user-friendly, more standardised.
- Telecommunications infrastructure is commoditised, making available many different delivery channels.
- The private care sector is beginning to integrate for procurement and delivery.

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- Results from the DH's WSD programme will inform other pilot schemes and encourage dialogue between stakeholders.
- Once in place, well-integrated telecare systems and technologies may reduce costs of health and social care.
- Increased independence due to provision of telecare can greatly improve quality of life, reducing doctor and hospital visits, delaying entry to care homes and increasing confidence and well-being.

13.4 Threats

- Sufficient investment will not be made to make the most of opportunities.
- Insufficient training of staff on installed telecare technologies will reduce care and cost benefits.
- Standardisation of systems will be resisted by manufacturers, reducing cost and efficiency benefits.
- Cross-sector service integration will be disjointed.
- Private and public sector will not sufficiently integrate procurement, provision and delivery to capitalise on potential cost reductions and patient benefits.
- Lessons learnt in pilot schemes will not be disseminated sufficiently for best practice to be widely implemented, resulting in services which are not integrated or standardised nationally.

14 Section 1 Summary

Work over the past decade, first on a small scale in university-led projects and, more recently, on a larger scale funded by government, has demonstrated some of the benefits of telecare for supporting people with LTCs and highlighted areas which require further development. Naturally, the focus of the work has been on people with high needs. In this report we have called this prescribed telecare.

With our knowledge of telecare development so far, it is now appropriate to look at providing services to those people (and their carers) who currently have less need and, therefore, fall outside statutory provision. We refer to this as elective telecare. The statutory sector does not have the resources to deliver on this enormous preventative agenda. This creates the opportunity for the development of new, sustainable models of private telecare delivery, both nationally and internationally.

The report goes on to identify thematic areas for study and development, in each of prescribed and elective telecare. This will be a challenge but, from the SWOT analysis, we believe that the South East is the place to undertake this work and that the rewards and benefits will be felt by individuals, companies, institutions and government across the South East.

Appropriate collaborations between academia, business and care providers will have to be constructed to address these opportunities under the auspices of a suitable infrastructure, such as a science and innovation campus. Given the world wide market opportunity and the international nature of technology and telecare development, this science and innovation campus should from the outset aim to be an international centre of excellence.

SECTION 2: THE CONSULTATIVE WORKSHOP

1 Feedback from ICE-T consultative workshop

Those who attended the consultative workshop, held on 24th April 2009, came from a wide range of stakeholders in the telecare arena, including public sector (e.g. local authorities, strategic health authorities, PCTs, NHS, government departments and agencies, regional government, universities) and private sector (e.g. telecare technology providers and manufacturers, telecare service providers, IT and data companies, private care providers, etc). Therefore, the workshop represented the views of most stakeholders who would be involved in the future of an International Centre of Excellence in Telecare (ICE-T).

Workshop Objectives

The objectives of the ICE-T consultative workshop were to:

- present the draft report for review.
- present possible structures of a science and innovation campus.
- obtain feedback on the report and workshop presentations in order to inform the telecare agenda in South East England, including the formation and development of a science and innovation campus as an International Centre of Excellence in Telecare (ICE-T).

The table on the following pages provides a distillation of the comments and feedback from discussions during two breakout sessions at the workshop.

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FEEDBACK FROM ICE-T CONSULTATIVE WORKSHOP HELD ON 24TH APRIL 2009

SESSION 1	
<p>Q1. Are the suggested 3 thematic areas for telecare the way forward?</p>	<p>Comments made on the three presented themes were:</p> <ol style="list-style-type: none"> 1. Private care services – the main market opportunities for telecare are in private sector domiciliary and residential care 2. Fragile/vulnerable groups – are generally managed by statutory sector and so this is a more difficult business case to make. There are too many possible fragile groups - need to narrow it down. Possibilities in palliative care. 3. Workplace support - a possibility of providing a service to SME's. Big companies tend to have own, but not currently involving telecare. <p>Other themes were also regarded as important:</p> <ul style="list-style-type: none"> ▪ Education and Training of professional and informal carers ▪ Standards – including best practice standards for telecare services, technical quality/interoperability/usability standards for telecare technologies, national/international standards in telecare training ▪ Use of existing technologies in diff environments e.g. non-health technologies in a health environment, home telecare in the workplace etc ▪ Integration (see below)
<p>Q2. What would the model for integrated delivery into overall health and social care systems be?</p>	<p>Integration of –</p> <ul style="list-style-type: none"> ▪ Technologies – standards/interoperability ▪ Humans and technology – usability/design of technology, uptake/compliance. ▪ All providers: health/care services + private/public/3rd sector -> 'single desk' ▪ Providers + business – services/products designed by/for those who use them i.e. providers/users ▪ Different stakeholder business sectors e.g. health technologies, communications, data/IT, security etc <p>There is a need to create a 'telecare community' and facilitate engagement, dialogue, dissemination of information, education, multi-disciplinary exchange</p>
<p>Q3. What is the business opportunity for telecare?</p>	<ul style="list-style-type: none"> ▪ Start in the private sector ▪ Good opportunities for SME's, but a danger of big companies and/or statutory sector wanting to 'own' the sector ▪ In increasing private/public engagement ▪ Providing integrated services/one-stop shop/single desk ▪ Demonstration of cost-effectiveness

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SESSION 2	
<p>Q1. What roles should the SIC take in enabling the telecare agenda?</p>	<ul style="list-style-type: none"> ▪ Provide a focus for stakeholder engagement and integration - facilitation ▪ Map the telecare landscape – update and disseminate information ▪ Provide education/training ▪ Provide demonstrators – but ‘real’ ones e.g. ‘try and buy’ centres, training demonstrators, user acceptability research ▪ Provide consultancy/advice/problem solving ▪ International focus – attract international expertise and represent the UK in Europe/internationally ▪ Focus not so much on research but on usability and saleability: getting potential products to market. ▪ Define a framework of terms e.g. telecare, elective/prescribed → glossary ▪ Facilitate IP/collaboration issues
<p>Q2. What structure/format should SIC take?</p>	<ul style="list-style-type: none"> ▪ Start virtual – ‘essential start point’ ▪ Start informal then make a structure ▪ ‘Hub and spoke’ structure - have some real hubs for physical meetings – close to users ▪ Central administration, but not a central facility ▪ Provision of comms connections/teleconferencing etc ▪ Membership – company limited by guarantee/join by subscription ▪ Must be sustainable and long-term
<p>Q3. What are the potential funding models?</p>	<ul style="list-style-type: none"> ▪ Public/Governmental – regional/national/international ▪ Agencies – TSB etc ▪ Charities ▪ Commercial – membership, consultancy, training services, etc: build up core funding to buffer ICE-T from public funding <p style="margin-left: 400px;">} N.B. Facilitation of strong partnerships by ICE-T will lead to stronger grant applications</p>
<p>Q4. What are the possible projects to drive the telecare ‘agenda’ forward – starting next Monday?</p>	<ul style="list-style-type: none"> ▪ Research/assess the telecare needs of private care homes/ancillary care services ▪ Improvement of the business sector’s understanding of the needs of telecare service providers and users ▪ Dementia – potential for telecare N.B. this is big government policy area ▪ Directory of existing products/services (N.B. Health Technologies KTN are currently compiling a directory, so it would be important not to duplicate work done) ▪ Training – investigating training needs and setting standards ▪ Standards and Regulation in Telecare ▪ Use of current products in new situations

2 Conclusions from the consultative workshop

Below is a summary of potential project areas and expected activities for ICE-T that were highlighted during the workshop.

SUMMARY OF ACTIVITY

1. Telecare Development Activity Matrix

<u>ENABLING ACTIONS</u>	<u>THEMATIC AREAS</u>		
	Private care home and domiciliary care sector	Support for fragile individuals or groups	Support for people in work or returning to work, through the workplace
Standards	←	←	←
Education and training	←	←	←
System integration	←	←	←
Social marketing	←	←	←
Usability and user involvement	←	←	←

2. Services to Members

Consultancy	Facilities
<ul style="list-style-type: none"> ▪ Advice on use of existing telecare products 	<ul style="list-style-type: none"> ▪ Demonstration site(s)
<ul style="list-style-type: none"> ▪ Advice on design of telecare services 	<ul style="list-style-type: none"> ▪ Administration hub linked to project sites
<ul style="list-style-type: none"> ▪ Facilitating contacts between suppliers, implementers and potential project partners. 	<ul style="list-style-type: none"> ▪ Communications and access to databases

SECTION 3: THE VISION AND OPERATION OF ICE-T

1 Context for an International Centre of Excellence in Telecare - ICE-T

Care policies and business policies are converging on telecare. Telecare is seen as a means of providing health and care delivery in the UK which is economically sustainable and meets increased consumer demand and expectations, yet at the same time uses the latest digital technologies and presents the opportunity for UK companies to access both national and international markets.

One of the potential markets and thematic areas for study identified in this report is fragile people and fragile groups who are not eligible for statutory services, but who nevertheless need support. The potential users of elective telecare then are the general public, not people who have received a diagnosis from the statutory sector. The requirement on elective telecare is for it to be assimilated into everyday life. Whilst most of these services will be in the areas of 'Contact', 'Healthcare' and 'Safety' (in the terms used in the diagram by Brainport on p.29) other teleservices might be relevant to these people and form part of the package of services that help them lead independent lives.

Another of the thematic areas identified in the report is support for people in work or returning to work. This too is identified by Brainport under the term 'Work and Study'. There are direct benefits to employers and employees, and to the statutory services, in maintaining a healthy workforce.

With its background of a decade of telecare trials, government support through funding initiatives and a healthy supply sector and knowledge base, the UK is well placed to identify the opportunities in telecare and to innovate to meet them. This report and the accompanying workshop identified the care and commercial opportunities that are available, but also the challenges. ICE-T is a means of addressing these opportunities by providing the necessary infrastructure and facilitating the correct collaborations.

2 Strategic fit between ICE-T and SEHTA

The South East Health Technologies Alliance, SEHTA, is the sector consortium for health technology in SE England, with a unique representation and understanding of SMEs and the health sub-sectors (biotechnology, diagnostics, medical devices and pharmaceuticals). SEHTA also acts as a bridge between the public (university/RDA) and private sectors.

SEHTA's mission is to facilitate the profitable and sustainable growth of companies in South East England's health technologies sector with a vision to become the largest and most respected health technology network in Europe.

SEHTA will seek to achieve these aims through:

- Identifying global market opportunities
- Engaging with key players in the supply chain
- Creating alliances and designing projects to meet market demands
- Providing access of companies to information and business support
- Generating income through a sustainable business plan
- Assisting SEEDA with delivery of the RES

Telecare has been identified as a high priority growth sector and the establishment of ICE-T to capitalise on these opportunities is a natural fit with SEHTA's objectives. SEHTA can provide ICE-T with an existing infrastructure on which to build, offering a cost-effective solution to the initial management and development of ICE-T. That infrastructure includes:

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- A large and diverse network of 1,100 members and a database of over 16,000 companies: these resources represent every sub-sector of health, the entire health supply chain and the knowledge base
- Existing relationships with other SEEDA-sponsored sector consortia, especially those concerned with digital content and security
- Existing relationships with appropriate strategic partners and funders e.g. DH, BERR, TSB
- Its experience and track record to date of developing substantial networks in telecare through its Telecare Knowledge Network (150 members) and activities relating to the network e.g. events and conferences

3 Development plan for ICE-T

The objective of ICE-T is to establish itself as a reference point for telecare, meeting SEEDA and government agendas for long-term sustainable business growth and for supporting care providers. Initially, the focus will be on South East England, but the aim from the outset should be to establish an International Centre of Excellence in Telecare. From a base within SEHTA, ICE-T will do this by identifying and funding innovative developments in telecare and related teleservices, and also by providing services to organisations that become members of ICE-T. ICE-T will have a small management structure which reports to SEHTA and to a new independent advisory group. The skills of the management team will be complemented through the use of specialist consultants, as and when required.

ICE-T will have five main functions:

- to provide support and seed funding to projects developing innovative telecare products and services. Initially these projects will be at the nodes in the telecare development activity matrix (p.39), where the thematic or application areas cross with the enabling actions, as identified in this report and confirmed in the workshop. Other themes and enabling actions may be identified in later years. Projects will be collaborative between industry and universities or NHS and will be match-funded by industry, as appropriate (50%, or 75% in the case of SMEs).
- to monitor and raise awareness of regional, national and international initiatives in telecare, in order to inform stakeholders, avoid duplication of activity and encourage innovative projects.
- to provide consultancy services to private and public sector organisations on aspects of telecare.
- to provide management to a network of project, showcase and incubator sites.
- to provide facilities across the region to showcase the use of technology in the delivery of care, to act as centres for the focus of ICE-T projects and to lead on one of the three identified themes in the telecare development activity matrix (p.39).

4 Proposed ICE-T Showcase sites

It is proposed that the three thematic areas identified as priorities for ICE-T each have a dedicated Showcase site in a different part of the SEEDA region. Each site would lead on one of the three identified themes:

- **Managed Environments** = Private care home and domiciliary care market theme
- **Home settings** = Support for fragile individuals or groups
- **Workplace** = Support for people in work or returning to work through the workplace

4.1 Proposed Showcase Site Specification

Each Showcase site should:

- be part of ICE-T and be managed centrally
- be identified as a Lead Centre of Excellence for the dedicated theme, but have the flexibility to introduce aspects from other themes
- be linked 'virtually' to each other site and have close working relations with other sites
- create flexible 'real' environment settings to demonstrate existing and future technology
- work alongside ICE-T to demonstrate standards, education and training, systems integration, social marketing and usability and user involvement
- develop local partnerships in order to transfer technology to end users and provide a route to market e.g. the Managed Environments site should be linked into several care homes to enable 'action research'
- offer approximately 5,000 sq ft flexible space to accommodate the range of environmental settings required
- create opportunity for software-based 'virtual' simulations of themes
- appoint a dedicated manager for the Showcase to maintain and develop the site, host visitors, assist incoming businesses, implement projects from ICE-T
- offer conference/workshop facilities
- offer business incubation facilities and support, possibly through partner organisations e.g. Innovation and Growth Teams

5 Benefits to Stakeholders

The objective of ICE-T is to develop new products and services which can form the basis of sustainable new businesses in each of the three thematic areas identified viz.:

- Private Care Home and Domiciliary Care sector
- Support for fragile individuals and groups
- Support for people through the workplace

Following the launch, ICE-T will facilitate the development of partnerships between domain experts in these three areas to specify the requirements and develop a plan for its realisation. In each case the result will be an improvement in care for those already receiving service and an improvement in access to service for those who are not. The partnerships will consist of organisations from the public sector, private sector, academic sector and voluntary or 3rd sector. Even at this early stage it is possible to identify some of the benefits that stakeholders and organisations will derive from involvement in ICE-T.

<u>BENEFIT</u>	Better care provision	Better access to services	Better product definition	Better market access	Preventative agenda / Existing demand reduction	Service development	Collaborative R&D opportunities
<u>STAKEHOLDER</u>							
Patient	✓						
Public		✓					
Industry							
- device			✓	✓			✓
- service			✓	✓		✓	✓
Public sector					✓	✓	✓
3rd sector						✓	
Academic							✓

6 Next Steps for ICE-T

ICE-T will be launched at the British Science Festival on 7th September 2009 at the Mandolay Hotel, Guildford, during SEEDA and SEHTA's telecare technology exhibition, 'TECHNOLOGY CARES'. See the link below for more information:

<http://www.britishtscienceassociation.org/forms/festival/events/showevent2.asp?EventID=186>

Prior to the launch, ICE-T is recruiting supporters from key stakeholder groups who share the vision of ICE-T and are keen to work with ICE-T to develop sustainable businesses in telecare. Supporters will be well placed to form consortia to undertake the work and projects required to develop ICE-T and the new businesses.

At the launch, the rationale and an explanation of the implementation of ICE-T will be presented to an invited audience. It is the intention to demonstrate the wide range of support that ICE-T has attracted. At and after the launch, other organisations and companies in the telecare sector will join ICE-T to take part in its activities.

After the launch, ICE-T will facilitate the formation of collaborative consortia to work in the three themed areas of activity and will provide seed resource to enable projects to proceed. ICE-T will start to operate and develop each of its four functions, including the three showcase sites.

APPENDICES

1 Appendix 1: Survey of Telecare Activity by Sue Comby, University of Surrey

Knowledge Matrix - HEI Sample

Organisation Name	Strengths
York St John University, Centre for Enabling Environments and Assistive Technology (CEEAT)	The Centre is led by a team from the Faculty of Health & Life Sciences at York St John University which constitutes a collaboration between health and social care practitioners and managers, educators, researchers, the voluntary sector and manufacturers. Areas of activity include: Assistive technology prescription, Telecare products and assessment, Access audit and environmental assessment, Inclusive design and product evaluation, Work rehabilitation/vocational rehabilitation.
Coventry University, Health Design and Technology Institute	Wide range of taught courses in the areas of assistive technologies. HDTI offers the opportunity for products within the community and consumer healthcare market to be tested and evaluated within the Institute. The HDTI provides an environment where consumers and patient needs across a broad spectrum are brought to the fore, and where innovation is a priority. The outcome is a creative approach to project work to develop new products and new systems of care provision. <ul style="list-style-type: none"> • MSc Intelligent Health Technology (Faculty of Engineering and Computing; • Postgraduate Certificate in Effective Use of Assistive Technologies. Launched in January 2008, for Health and Social Care workers in response to the £80m Govt.initiative to boost patients well-being and independence.
De Montfort	Activity centred in the Faculty of Computing Sciences and Engineering – Principal Lecturer and lead academic on this is Eric Goodyer who has won UK and European awards for his proposal for next generation telecare technology – “mobiAssist”. DMU hosting the Ambient Assisted Living networking day on March

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	20 th . Within the Faculty of Engineering and Technology, the Wireless, Multimedia Communications & Signal Processing Research Group has “The Healthcare Project” – looking at telecare for elderly patients.
Northumbria University	Have a PhD student evaluating local telecare in Newcastle and are involved in dementia care. They have a centre (The Bradbury Centre) for those with dementia but not telecare related.
University of Lancaster	Part of a large European funded Project in telecare (EFORTT): This research asks what are the normative reasons for and implications of, the introduction of remote care technologies for frail elderly people, for different stakeholders and for gender divisions in particular? The research will deepen the understanding of ethical issues raised by the development of new technologies of care from a distance worn, installed or embedded in the homes of older citizens. It will develop qualitative (ethnographic) approaches to understand the making of practice around remote care in both preventive and responsive modes. It will also develop deliberative approaches to the making of telecare policy at a European level by recruiting a citizen's panel in each partner's region to generate foresight into new care technologies and relations and by reconvening the panels to consider findings from the ethnographic studies. The project will develop an empirical ethics of evolving and of future care technologies based on ethnographic and deliberative methodologies. Also emailed Maggie Mort for more info on the centre and research activities 5/3/09.
Sheffield	ACT programme began in 2006. ACT stands for Advance Care Technologies and includes studies into Assistive technologies and telecare. Two-thirds of the programme's resources will be dedicated to new Research & Development (R&D) projects, and one-third to Knowledge Transfer activities. Most activity seems to be aimed at assisting the ageing population.
Bradford	Large project (AEGIS) that is finding new ways to monitor people in their homes non-invasively.
Newcastle Upon Tyne Uni	Telecare research has been undertaken at ncl but does not appear to be a separate 'centre'. Part of the Health

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	Technologies and Human Relations Programme, within the Institute of Health and Society.
Uni of Stirling	<p>Sterling have research clusters; one of these is “Enhancing Self Care”. One of the fields of activity of this cluster is the application of telecare networks and other health care technologies. The cluster itself receives a lot of input from NHS-Scotland and Scottish Funding Council (SFC)’s Alliance for Self Care Research.</p> <p>In the Computer Science and Mathematics Department, they have a research project called MATCH (Mobilising Advanced Technologies for Care at Home). The project runs from November 2005 to October 2009. Stirling PI is Prof.Ken Turner, and project collaborators are the Universities of Dundee; Edinburgh and Glasgow. This SFC funded projects has specialised expertise in home care networks; lifestyle monitoring; speech communication; and assistive technology.</p> <p>CPD Course: “Design, Technology and Care” for anyone working in the field of dementia care, with an interest in assistive technology/Telecare/Telehealth and the physical environment.</p>
Uni of Ulster	<p>Ulster have a School of Life Sciences which have a number of projects which touch on ICT and assistive technologies which incorporate telecare. Professor Chris Nugent – Professor of Biomedical Engineering – is involved in the University’s “Connected Health” capability (basically covering a range of technology supported healthcare services including Telemedicine; Telecare; Telehealth; and eHealth). Ulster is part of a consortium of Universities awarded £2.3m by the EPSRC for a four year “Self Management supported by Assistive, Rehabilitation and Telecare Technologies project known as SMART2. This was awarded in December 2007. Other Universities involved are Sheffield Hallam; Bath and Sheffield.</p> <p>On the 27th January 2009, it was announced that the Department of Employment and Learning (NI) has awarded Ulster £2 million to develop a new world class cross-border Centre for Intelligent Point of Care Sensors. This is to be operated jointly by Ulster and Dublin City University (DCU), and it will</p>

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	drive all-island research and development in the sector.
Imperial College London	Highly active in this area. The Healthcare Management Group sits within the Business School. The group comprises the Health and Care Infrastructure Research and Innovation Centre (HaCIRIC) which is a collaboration between existing research centres at Imperial; Loughborough; Reading; and Salford, and the Centre for Health Management. The HaCIRIC is taking part in the WSD evaluation, looking specifically at the organisational factors underlying the successful and sustainable introduction of the new services. Imperial are involved in a number of other research projects that are looking at various aspects of e-health and that touch on telecare. A number of their researchers are active in some aspect of this. Within their Innovation Studies Centre, Professor James Barlow is head of the research stream “Health and Social Care Delivery Research” whose focus is on telecare and telemedicine.
Sheffield Hallam	Centre for Health and Social Care Research established in 2003.
Uni of Abertay, Dundee	Prof. David Bradley engaged in telecare and telehealth research. Includes work on the technology of telecare systems and the means by which data is analysed and interpreted. Covers aspects of AI in predicting behaviour. Also working on the structure of home based systems for telecare.
Glasgow Caledonian University	CPD Course: “Contemporary Perspectives on Assistive Technology” designed for experienced qualified staff with an interest and some experience of assistive technology.
Uni of Birmingham Health Services Management Centre	Chris Ham, Professor of Health Policy Management, has been appointed by DH to coordinate the evaluation of the Whole System Demonstrators. Iestyn Williams is working in the area of Telecare/e-Health and has confirmed that, in general, work at Birmingham in this area, tends to revolve around specifically commissioned projects and the interests of individual researchers. In particular, they have conducted reviews of the evidence in relation to telecare and evaluations on specific devices and interventions. 2 reports supplied 9/3/09 to Surrey in response to a request for specific information. The first is a 59 page report (September 2008)

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	<p>“Automatic Medicine Dispensers A Review of Evidence and Current Practice” and a 24 page report (May 2008) “Telecare: a Rapid Review of the Evidence 2005-2008”.</p>
UCL	<p>Stan Newman is leading a team of researchers (coordinated by Chris Ham) carrying out the two year (from April 2008) evaluation of the WSD.</p>
Coventry	<ul style="list-style-type: none"> • MSc Intelligent Health Technology (Faculty of Engineering and Computing; • Postgraduate Certificate in Effective Use of Assistive Technologies. Launched in January 2008, for Health and Social Care workers in response to the £80m Govt.initiative to boost patients well-being and independence.
SOUTH EAST REGION UNIVERSITIES	
Bucks University, Telehealth Research Group	<p>New</p> <ul style="list-style-type: none"> • Cardiology – linking Serbia with specialists using simple videoconferencing equipment; • Cardiology – ECGs taken in Primary care and the community using an established Cardiac Call Centre; • Heart Failure – supporting patients in the community; • Chronic Fatigue Syndrome – outpatient review and support for severely affected patients at home; • Spinal Cord Injuries – work to compare the images produced by various types of technologies. <p>Information provided 10/3/09 by Dr.Gwyn Weatherburn, (Reader Medical Imaging at the Research Centre for Society & Health) leads the Telehealth Research Group.</p>
Open University, Clinical E-Science Framework	<p>Project designed to provide clinicians and GPs with easy access to accurate and relevant information about patients at the point of care – thus eliminating the need for the extensive research of paper-based files.</p> <p>Aim is to develop an electronic information repository.</p> <p>Project Investigators are OU Computing Dept.; Cambridge; UCL; Manchester; Sheffield; and Royal Marsden.</p>
Oxford Brookes University	<p>Ambulatory patient monitoring</p>
University of Oxford	<p>Telemonitoring, signal processing: spin out: T+ Medical</p>
Brunel University, Health Economics Research Group	<p>Economic evaluation of a broad range of clinical and health service technologies and its dual aim is to provide applied, policy-relevant research whilst developing and refining methods to increase the rigour and relevance of such studies.</p>
Brunel University, MATCH	<p>Support the healthcare technology sector and its user communities by creating methods to assess value from concept through to mature product and by engaging with regulatory bodies at home and abroad’.</p>
Brunel Centre for Health Informatics and Computing	<p>Information and knowledge management</p>
Brunel University	<p>European project: DIADEM- provide an adaptable web browser interface, to enable people who suffer a reduction in cognitive skills to remain active and independent members of society both at work and at home.</p>

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Brunel University, Institute for Biongeering	The development of telecare devices and systems to meet the need for independence of an ageing population
University of Kent, Centre for Health Services Studies	Evaluation of telecare: Centre for Health Services Studies (CHSS) at Kent evaluated a 6 month pilot telecare scheme being run by Kent Social Services in Tonbridge and Malling; Swale; and Maidstone. Department of Electronics: Two main areas of research, one is telemedicine. Work here is focussed on telecare. Formerly, it was looking at telecare solutions for people with chronic conditions, but more recently they have been working with the Computing Department on an extension of this work into the monitoring of older people.
University of Reading, EQUAL network	Improve the living environments and hence the quality of life of older people and disabled people by promoting interdisciplinary engineering based research and its application.
University of Reading, Built Environment	Housing, internal environment, assistive technology in home
University of Portsmouth	Telecare Knowledge Network, telemedicine and e-health information service, expertise in evaluation of telecare, health informatics, telecare product development
University of Surrey	Telemonitoring, evaluation, centre for communications systems research <ul style="list-style-type: none"> • Telecare for people with chronic pulmonary disease (Khim Horton); • Preliminary exploration of patients and professionals' perception of e-technology in the context of palliative care (Sara Faithfull, the SPACE study); • Collaboration with UCL on a systematic review of the literature on diffusion, spread and sustainability of innovations in health service delivery and organisation (Fraser McFarlane).
Kingston University, Mobile Information and Network Technologies Centre	Security issues in healthcare, personalised healthcare, emerging wireless healthcare management, intelligent mobile healthcare
Univ. of Southampton, School of health professions and rehabilitation sciences	Computer assisted rehabilitation, smart clothing Use of the internet to support self-management of chronic illness & health, with a focus on empowering people to take control over their illness and its treatment. Many long-term and on-going national and International studies of telemedicine and the use of ICT in the delivery of health care. Working relationship with the Southampton City Council and Southampton PCT on telehealthcare planning, deployment, and evaluation, targeted at making Southampton a health city. Remote monitoring and disease management of cardiac patients with implanted devices. Cochlear Implant Centre - remote monitoring and remote adjustment. Monitoring of joint replacements with integrated wireless transceivers. Development of unique sensors for integration into the 'smart bed', facilitating the remote monitoring of bed ridden chronically ill patients.
Cranfield	Healthcare operations management, translational medicine, cyber security
Royal Holloway	ICT for development
University of Winchester	Course in managing e-health and telemedicine
University of Greenwich	Teaching in provision of care services Greenwich have a very active tele-healthcare research group. They have recently formed a tele-healthcare focus group, which includes several research-active academic staff from the School of Engineering and the School of Science . They are actively seeking research funding both internally and externally.
University of Buckingham	Background capability in imaging and telemedicine
University of Sussex	Informatics, human-computer interface, sensor development.

Europe + USA & Japan

The **ICT & Ageing – Users, Markets and Technologies* study funded by the European Commission

A core strand of work focuses on analysing the ‘ICT and Ageing’ market situation across 14 selected Member States and two key comparison countries outside the EU (USA and Japan).

This study is one of the first to develop a systematic and coherent baseline and mapping of the market situation for telecare and telehealth for older people in Europe.

*Preliminary findings October 2008 (*from source document)*

Exhibit 6: Level of mainstreaming

	Fully mainstreamed	Partially mainstreamed	Pilot/trial activity	Little or no activity
Social alarms (1st generation)	DK, DE, ES, FI, FR, HU, IE, IT, NL, SE, UK, US, JP	PL, SI		BG
Telecare (2nd generation)		Leading: UK, (FI), (US) Others (with some mainstream availability/capacity): ES, IE, SI, DE, DK, NL, SE, JP, IT, FR, PL	HU	BG
Telecare (3rd generation)			US, JP (RTD/trials beginning in a number of EU countries)	(Majority of countries up to now)

Bulgaria (BG)



First generation telecare (social alarms)

Social alarm services are yet to be implemented in Bulgaria. The national Red Cross organisation was planning a pilot initiative in this direction, but the lack of resources proved to be a major hurdle here. The main actor expected to drive future developments on a governmental level is the State Agency for Information Technologies and Communications (SAITC). It plans to organize a call for tender in January 2009 related to Objective 1.3 – ICT for ageing well, as stated in the draft EC ICT PSP Work Programme for 2009.

More advanced telecare

The fact that telecare services do not form part of a specific governmental policy or research, as well as the current state of public sector finances suggest that public allocations for new ICT-based services will be rather insignificant in the coming years. Limited marketing of telecare applications might be expected from private entrepreneurs instead.

At the annual fair 'BAIT EXPO' organised by the Bulgarian Association on Information Technologies from 4 to 8 November 2008 in Sofia, representatives of the IT industry announced the first phase of 'Palm Secure', a project that can offer various telecare solutions. The project is led by a holding of seven IT companies called Professional Information Management PRIMA.

Germany (DE)



First generation telecare (social alarms)

Social alarm services have been provided in Germany for more than 25 years and are available throughout the country. Nearly 90% of the social alarm services are provided by the six large social welfare organisations. The rest of the market is made up by commercial providers, such as Recontrol, Tunstall, Vitaphone, HausNotruf Service GmbH and Bosch. In addition, an increasing number of housing organisations are providing social alarm services, e.g. the housing societies in Wuppertal or in Gelsenkirchen within the framework of SOPHIA. Some of the service providers also offer mobile alarms offering GPS localisation. Mobile alarms are not widely in use, however, since reimbursement within the framework of the long term care insurance is not possible yet. The social welfare organisations that are providing the social alarm services often have their own call centres. There are around 180 call centres run by welfare as well as commercial organisations in Germany.

More advanced telecare

While some forms of telecare are widely available in the form of enhancements to basic social alarms (e.g. smoke detectors, gas detectors, fall detectors or movement detectors), in practice there is rather little usage of anything other than basic social alarms. Some social alarm providers offer additional services such as organisation of home-and outpatient services, and reminder calls (partly automated), although the latter appear not to be much in use.

Apart from social-alarm based telecare, there are only a few other telecare services up-and-running on the marketplace. One example is the SOPHIA service which is a commercial picture-based care and communication service for older people, operated as a regional franchise company which seeks to extend operations nationwide. The service model is for a new standard for safety and security, communication, comfort, telemedicine, multimedia and facility management. It is currently the only picture communication service and several other efforts to establish comparable services on the German senior market failed.

Telecare devices and services are yet not listed in the eligibility catalogues of insurers, which means that costs are not reimbursed under the insurance systems and have to be paid for out of pocket.

Denmark (DK)



First generation telecare (social alarms)

Social alarms are available nationwide in Denmark. Take-up is estimated at between 6 and 7% of older people aged 65 years or over. Municipalities are the main players and often provide the services themselves or may outsource the service whilst keeping overall control. In general, social alarm services are an integral part of the mainstream homecare services, with the response often provided by social care staff or contracted private services.

Social alarms are provided to both older people in their own homes and those in sheltered housing units, although the general policy in Denmark has been to encourage older people to live in ordinary homes in the community rather than sheltered housing.

End users of social alarm services are not charged where this enables them to remain at home.

More advanced telecare

Passive telecare systems (enhancements to basic social alarms with addition of extra sensors) have been available for a long time but seem not to be widely used. There is some limited availability / take-up as part of mainstream services but otherwise mainly being addressed through some trials/pilots. There has apparently been some resistance to passive monitoring because of the 'surveillance' aspect and there is legislation that regulates the circumstances under which it may be used.

Spain (ES)



First generation telecare (social alarms)

Social alarms are referred to as tele-alarms and telecare is known as tele-assistance. Tele-alarms are the most common form of ICT-based technology for independent living, and are available throughout the country. Take-up is estimated at between 3% and 3.5% of the population aged 65 years and older. The main providers are municipalities under the Autonomous Communities of Spain, who subsidise the service.

The Law on the Promotion of Personal Autonomy and Care of Those in Dependent Situations (39/2006) defines and sets the remit for tele-alarm and tele-assistance services. The aim of tele-alarms and tele-assistance under this policy is to contribute to ensuring that vulnerable people remain in their normal living environment, avoiding the important personal, social and economic costs which their uprooting from this setting would entail, making contact with their social and family network possible and ensuring immediate intervention in the event of a crisis and to avoid unnecessary admission to residential care.

As regards charging/reimbursement, each Autonomous Community determines the price of the tele-alarm service and the requirements for users to qualify for the different discounts available. Full cost might be between 15 and 20 euros per month, with a range of actual costs depending on level of discount (100%, 80%, 40% etc.).

More advanced telecare

Tele-assistance (telecare) services are also available nationally, at least in principle, although apparently only installed in the cases of greatest need. Take-up is less than 0.5% of tele-alarm users. Tele-assistance is an extension of the tele-alarm service and service provision and reimbursement arrangements are the same. Tele-assistance services are allocated according to the degree of dependence of the user, rather than according to their age. If the service provider is a public entity, the service costs same as a basic tele-alarm.

Finland (FI)



First generation telecare (social alarms)

Social alarm services are provided across the whole country as part of social welfare and health services. The Finnish Act on Social Services basically gives all citizens who are in need of care a right to get social alarm services if needed. The municipalities may either provide the services themselves or in cooperation with neighbouring municipalities or purchase from private or third sector service providers.

Social alarm services in Finland are provided both to people living in ordinary housing in the community and to those in service flats or sheltered housing. It seems that responses are provided by social care staff and/or informal carers.

There is no precise data available on the take-up of alarm services in Finland, although it can be estimated as being somewhere in the order of 8-10% of older people aged 65 years and older. End-users of the alarms living in ordinary housing in the community are charged an average €25 a month by municipalities. In service flats and sheltered housing, social alarm services are included in the payment for housing.

More advanced telecare

There is no formal telecare system in Finland, although the capacity is in principle available across the country through the social alarm infrastructure. Usage levels are still low and there are mainly pilots and trials taking place. However, there seems to be some degree of mainstreaming of new telecare products in sheltered housing and also for older people living in ordinary homes. One such product is Vivago WristCare, a commercially available solution that is marketed both to home users and to providers of sheltered or institutional care. If it registers a significant change in the user's activity level, it automatically sends an alarm to the alarm recipient. The product is now marketed in a number of countries and there are apparently somewhere between 10,000 and 20,000 users.

France (FR)



First generation telecare (social alarms)

Social alarm services are widely available throughout the country and are provided at the level of counties and municipalities. Service operation may include various players such as local fire departments, commercial organisations and insurance companies.

Uptake of social alarms is estimated at about 3% of the population aged 65 and above. Existence of considerable variation in end user charges across the country has been reported. It is estimated that the average monthly service charge ranged between 25 and 35 Euro. Beyond this, sometimes an initial installation charge may be imposed to the end user, which may amount to about 50 Euro. Social funding is estimated to range between 30% and 50% of monthly costs, while in some parts of the country the service has been reported to be provided free of charge. Users who are eligible to receive support under the social benefit scheme can receive full cost reimbursement.

More advanced telecare

More advanced telecare systems that go beyond simple social push button alarms seem to have mainstreamed to some extent under current alarm services schemes. Main market players have joined together within the Association of Teleassistance (AFRATA), with a view to developing quality standards and supporting wider service uptake.

As in the case of simple social alarms pricing seems to vary across the country. Average monthly service charges have been estimated at about 38 Euro. As in the case of simple social alarms, reimbursement under social benefit scheme may be possible in relation to certain eligibility criteria.

Hungary (HU)



First generation telecare (social alarms)

Since January 2008 each Hungarian municipality with over 10,000 inhabitants has an obligation to offer 'telecare home service' (basically social alarms) to elderly people (above 65) who live alone or with their partner, and whose medical condition makes support necessary. Municipalities may choose to provide the services themselves, or to outsource them.

As a consequence, social alarm services are available across the whole country with the exception of some smaller municipalities. Currently 3% of older people in Hungary are availing of social alarm services. It is estimated that 50,000 older people will be provided with social alarms by the end of 2008. Service providers (municipalities or private providers) may ask for co-payment, which is limited to a maximum of 2% of the monthly income of the recipient. Because of some problems with service quality, the current focus is on improving the quality of social alarm services by prescribing that only home care providers may offer the service.

More advanced telecare

Telecare services are not mainstreamed in the country yet. Some of the social alarm service providers (organised in the eVITA Alliance) are planning to offer telecare services on the basis of the business model used for social alarms. For this they plan to use the existing service network as the basis for implementation of value-added, higher-level telecare services. The current state of public sector finances, however, suggests that public budgets for implementation of new ICT-based services will be very limited in the coming years.

The National Office for Research and Technology (NKTH)'s Jedlin Anyos Programme is supporting research projects in the field of ambient technologies and on social telemonitoring and alarm systems.

Ireland (IE)



First generation telecare (social alarms)

First generation telecare (social alarms) Social alarm services are, in principle, available across the whole country. The services are mainly provided by private suppliers (mainly for-profit, some non-profit also). There is a publicly-funded scheme providing financial support for installation costs of social alarms which operates through voluntary and community based organisations. The estimated total take up is between 60,000 -70,000 people, representing about 13 -15% of those aged 65 or over in Ireland. The estimated total take up for people living in supported housing is about 75% of all units (about 2% of older people live in this type of housing). For services to people in ordinary homes in the community, the private sector providers set-up connections either directly to older people who apply themselves or via community and voluntary organisations. Social alarms provided in this way are not linked into the mainstream care services and family members and, where necessary, emergency services are alerted by the call centre. However, consideration is currently being given to the possible mainstreaming of social alarms services and other forms of ICT-based assistive technology into care services for older people. In case of private subscription, initial installation charges are typically in the region of 300 euro, and annual monitoring / maintenance charges of between 66 and 90 euro per year. In the case of publicly-funded provision to older people living in normal housing, the installation fee is covered under the Scheme of Community Support for Older People but users must pay annual monitoring / maintenance costs themselves (about 80 euro).

More advanced telecare

More advanced telecare There has been very limited take-up of more advanced telecare in Ireland to date, although some private and non-profit social alarm providers and social care providers now offer telecare 'extras' as part of their services. However, there have been a few pilot schemes in recent years and it is expected that telecare will receive more attention at national level in the coming years.

Italy (IT)



First generation telecare (social alarms)

Social alarm services are widely available, although many local service offerings seem to have emerged only during recent years. Today, the major municipalities in Italy seem to have initiated social alarm schemes and in some cases such schemes have been initiated by the Provinces. Uptake is estimated at between 1% and 2% of the overall population aged 65 years and above. In many cases the technical infrastructure, notably alarm centres, and the service itself are operated by commercial service providers or third sector organisations. This accords with the general situation in Italy where social and welfare service frameworks are determined on local or regional administrative levels and are often complemented by services provided by commercial and/or voluntary organisations. There seems to be no general charging model that applies across the whole country. Individual examples suggest that users tend to be charged a monthly service fee at about €20 -€40. Under certain circumstances users may be eligible to use the service free of charge.

More advanced telecare

More advanced telecare systems that go beyond simple push bottom alarms seem to have been implemented mainly in experimental settings as of today. However, some pilot services seem to have been mainstreamed in a local context. For instance, a telecare scheme (Non Piu Soli) involving psychological support and medical assistance has recently become available to older people living in the municipality of Rome. Overall, however, advanced telecare schemes have up to now played a negligible role in the market for community based monitoring services.

The Netherlands (NL)



First generation telecare (social alarms)

For a long time already, social alarms have been an important component of homecare and independent living in the Netherlands. Consecutively, new functions such as safety, comfort, access control etc. have been added to the basic social alarm systems. With this social alarm systems have been given even more importance. About 3% of those aged 65+ are currently availing of the service, which is available across the whole country and is provided to both older people in supported housing and ordinary housing. In general, the response service is provided either by the family carer or by a professional home care organisation (either public or commercial). If there is no family carer available, a person may choose for immediate follow up by a professional care worker. In the latter case, the monthly subscription fee will be higher. Eligibility for publicly funded social alarms is decided based on an assessment that includes care needs and personal circumstances, and includes means-testing. In a small minority of cases medical criteria may be invoked to enable social alarm reimbursement by an insurance company.

More advanced telecare

Telecare is mainly provided in pilot and trial activities. Fall detectors are hardly used, since the ones that are commercially available are not considered reliable or easy to use. There are some trials going on with add-on sensors, but there is no real mainstream incorporation of telecare in social care for older people as far as these sensors are concerned. Meanwhile, screen-to-screen contact pilots in which patients receive care via digital media are further developed. The Ministry of Health has taken a temporary measure for reimbursement of screen-to-screen telecare equipment and related services, as it is believed that this way of care can partly replace the visits of home care workers and postpone the intake in residential care homes or nursing homes, thereby lowering costs and increasing quality of life. Therefore a large number of trials are taking pace, but take-up is still below 1 % of the population 65+ (current estimates are that there are about 1000 users in the country).

Poland (PL)



First generation telecare (social alarms)

Poland has seen the development of a private market for social alarm services in recent years. A number of providers offer their services in the major agglomerations or even across the whole country, but the quality of the back-up services appears to vary significantly. The most widely available service appears to be “Line of life” by Polish Telecare System Sp. z o.o., which is marketed as a “national personal help calling system” in co-operation with the public emergency rescue services. Other major providers include Sara Care Centre, AMBER (which offers a “personal immediate help calling system”), and SpyTel. No data on numbers of users are available from providers or from other sources. To raise awareness about the usefulness of social alarm systems, in many Polish regions publicity campaigns have been organised in recent months in cooperation with the emergency rescue system. Until now, social alarm systems are not covered by universal insurance in Poland, and no public financial support from the State is available. Users need to pay for the service out of their own pockets. Prices include hire for the equipment (between €0 and €7 per month, depending on the provider), installation costs, and a subscription fee (between €14 and €20 per month).

More advanced telecare

As of yet, telecare applications play little role in the provision of long-term and social care in Poland. However, some private providers of social alarm services also include basic telecare applications in their offer. For example, “AMBER of Health Service” includes fall detection and home security features (detection of smoke, gas and flooding), with alarm response provided by the provider’s own monitoring centre. This service is available across the country, and needs to be paid out of pocket. Telecare has not attracted any significant interest from policy-making so far in Poland.

Sweden (SE)



More advanced telecare

More advanced telecare Social alarm services are available throughout the country. They are provided both to people living in ordinary (mainstream) housing and in sheltered housing ('service' houses or flats). Social alarms for those living in ordinary housing are generally provided by municipalities although recently some private companies are entering the marketplace. Standard social alarms are connected to an alarm centre that forwards the information to formal services (home-help services) and/or family members. There is substantial provision of home care services in Sweden, and social alarms are routinely considered and, where needed, offered as part of this. It is estimated that a total of about 160,000 social alarms are installed across Sweden, indicating a take-up of about 10% amongst people aged 65 years and over. About one-half of these are in service flats and the other in ordinary (mainstream) housing in the community. If a user receives home help, social alarm installation costs are generally covered by the municipalities. Users generally pay some of the service costs, and this can vary somewhat across municipalities although would generally be of the order of about 10 euro per month

More advanced telecare

More advanced telecare There seems to be some degree of mainstreaming of more advanced telecare (social alarms with 'extras', such as movement and other environment sensors) by municipalities, but not in any consistent manner across the country. There are also a number of trials. In addition, some private services offer telecare and some municipalities offer videophone-based telecare on a mainstream or trial basis, for example the West Sweden city of Borås which in the ACTION project has tested videophone links with older people/their families. Currently, approximately seventy five families are using the service, which is now being tested in other municipalities as well. Although there is no specific policy, as such, in relation to telecare or an explicit statutory right to telecare services, such services at least in principle fall within the scope of social care for older people and/or assistive technologies. More generally, there is no one policy that applies to the whole country. Each municipality or county council sets their own policy in relation to care (including telecare, if this dimension is addressed), so there is considerable variation across the country.

Slovenia (SI)



First generation telecare (social alarms)

Overall, ICTs for independent living are at a very early stage of development in Slovenia. The Lifeline/Red Button social alarm service is only available in 5 regions and there are reported to be approximately 300 older and disabled people using the service in Slovenia. The service is provided by social care services in co-operation with municipalities, who also subsidise the service. The amount charged depends on the resources of the client. The introduction of a Lifeline program at national level is currently being discussed. There is general agreement that the proposed program has substantial merits, nevertheless the program has not yet been implemented.

The Government programme Social Care of Older People in Slovenia to 2005 proposed a network of 15 regional social alarm response centres. Only some of the regions have implemented this as of yet.

More advanced telecare

Telecare services are in principle available in 4 regions. There is no exact figure on take-up, however it is extremely low, as the use of sensors in the home is very rare. Trial activities have recently been initiated in the context of the IRIS Smart Home project.

No specific policy has yet been developed for telecare, however an act on long-term care is in preparation, which will explicitly include telecare.

United Kingdom (UK)



First generation telecare (social alarms)

First generation telecare (social alarms) The UK has a well-developed infrastructure of community alarm services provided by local housing authorities, social services and the voluntary and private sectors. Social alarm services are provided to both people living in sheltered housing and in ordinary housing in the community. There is also a significant private subscriber market. Overall, there are an estimated 1.5-1.6 million people using some form of social alarm in the UK, representing about 15% of those aged 65 years or older. Most local authorities run an alarm scheme, either directly provided themselves or with outsourcing to a private supplier. In general, it seems that outside of the sheltered housing context, family carers are typically the main responders once the call centre has been alerted, although in some areas the social care services also provide a mobile response team in addition to the nominated informal carer response. The charging/reimbursement situation varies across local authorities. As a general rule, it seems that equipment is provided free of charge to those with an assessed need and users pay a monthly usage charge unless they are eligible for waiving of this on the basis of low income. User costs may vary between 10 and 25 euro per month, depending on location and provider.

More advanced telecare

More advanced telecare In recent years, social care authorities have been putting into place telecare sensor services (e.g. smoke, heat, flood detectors) and the UK is on the verge of taking telecare into the mainstream. This has been driven by policy and funding, including the Preventative Technology Grant in England and other programmes on telecare in Scotland, Wales and Northern Ireland. It has been reported there were nearly 150,000 new telecare users in England in 2006/7, and a further 161,000 in 2007/8. If all of these involved enhancements to the basic social alarms through addition of sensors and so on, then this would amount to about 3% of the population aged 65 years or older having 'telecare'. Provision and charging approaches vary considerably across local authorities. In general, the most common approach seems to be similar to that for social alarms although sometimes at a higher level because of the additional extras provided.

Japan (JP)



First generation telecare (social alarms)

First generation telecare (social alarms) In Japan, the history of personal security alarm services traces back to the early 1980s. Since then many services have emerged that are operated by the municipal fire departments, as well as services that have been contracted out to private companies and voluntary organisations. Beyond this, social alarm schemes are operated by commercial property security services. Also, municipal social alarm schemes have started to emerge that specifically target older people in the context of community care frameworks implemented at the regional level, e.g. in the Miyagi prefecture covering 71 municipalities. It is estimated that not more than 3% of the elderly population may currently use social alarms. There seems to be no general charging model. While purely commercial alarm schemes exist community based schemes that involve some form of public funding are available as well.

More advanced telecare

More advanced telecare In view of the demographic development, telecare has received considerable attention on the part of the Japanese government already during the 1990s. A considerable number of pilot implementations have for instance been funded by the Ministry of Health and Welfare since then, e.g. a large scale model project (the so called Telemedicine Promotion Model Project) addressing municipalities with a view to encourage mainstreaming of a set of 20 telecare services directed towards older people living in the community. Previously, the ministry had issued a document entitled 'Guidelines for Implementing Information Technology in the Areas of Health, Medical Care and Welfare'. Despite such efforts and the existence of a strong industrial basis when it comes to equipment manufacturing, uptake of more advanced telecare applications has fallen below expectations as of today. Implementation of systems that go beyond simple push button alarms still largely concern pilot and trial activities. However, some local mainstreaming of passive alarm sensors, i.e. sensors that do not need to be actively triggered by the service users, has been reported.

United States (US)



First generation telecare (social alarms)

Social alarms are called personal emergency response systems (PERS) in the USA and are in principle available in all parts of the country. There are both national and local providers, including private companies, hospitals and social service agencies. It has been estimated that about 2.3% of the population aged 65 years and older use social alarms. The main forms of provision are either linked to healthcare facilities or through private companies. In the former case, the response may often be provided by staff employed by the healthcare facility; in the latter case, response would normally be by local, user-nominated contacts. Historically, the focus seems to have been especially on provision by hospitals or other healthcare facilities with a view to reducing bed-occupancy and other costs. There also has been provision by religious/charities as a more social welfare oriented service, and by manufacturers and security companies. Most PERS are purchased out of pocket by the individual or their family members. Purchase prices range from \$200 to more than \$1,500. There are additional charges for installation and monthly monitoring ranging from \$10-\$30.

More advanced telecare

There has been an overall increase in interest in telecare, with the emphasis/focus apparently more on healthcare than social care in a wider sense. Such 'telecare' services are provided by a range of providers including medical/clinical practice sites, hospitals and social service providers, both public and private. The availability of services varies from state to state with little or no coherence in application or utilization. The extent of take-up varies hugely across the country and there is no data available on the extent of take-up. To date, the Veterans Administration healthcare system seems to be the main provider of telecare services with an independent living focus, even though the main focus of its remote support/monitoring is telehealth. Some of the services have been mainstreamed. In Florida, for example, the Low ADL Monitoring Program (LAMP) is a Community Care Coordination Service (CCCS) program designed to address the needs of veterans with activities of daily living (ADL) dependence through care coordination and the use of home monitoring and communications technology.

Pilot Schemes and Case Studies

Source: www.tunstallgroup.com

1. Telemedicine – The way forward in chronic disease management? A clinical evaluation & research document written and researched by D.M.Taylor RGN (Dip)

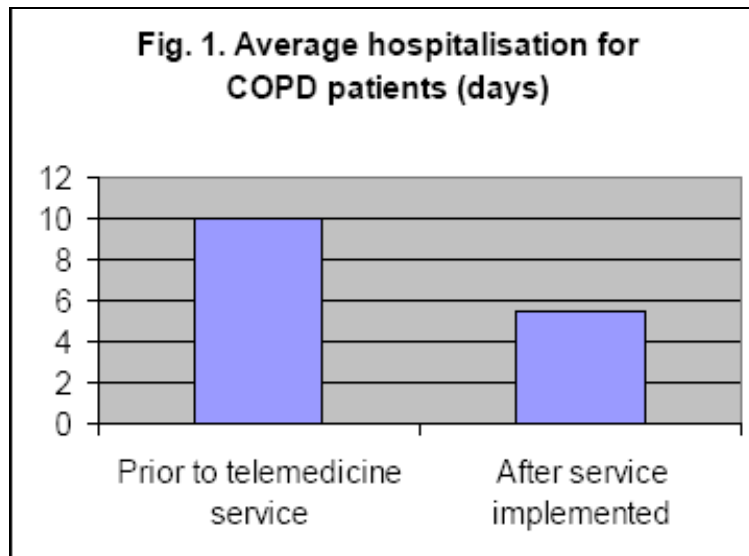
In the National COPD audit (2004) there were c.8013 emergency admissions of patients with acute exacerbation, with 31% of patients being re-admitted within 90 days. Currently, the cost per annum for COPD is £818m – largely based on expenses such as transport, hospital admission, GP tests, home visits, out patient care and pharmacology costs.

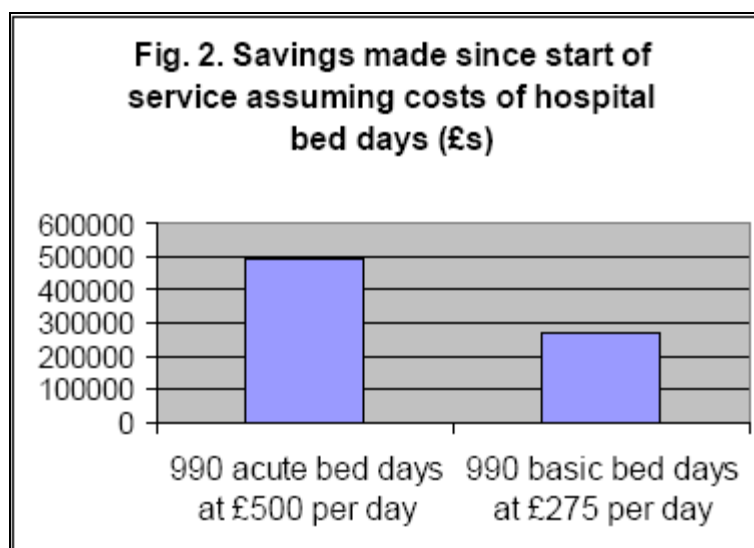
Case Study (from 2002)

Carlisle Housing Association Careline Service worked with Carlisle and District Primary Care Trust to develop a plan of care supporting early discharge. A designated COPD team and a team from Careline were jointly trained on the use of Telemedicine Units. Clinical parameters were set by clinicians for each individual patient and if the reading from the Telemedicine units deviated from set levels an alert would be forwarded to Carlisle Housing Association Careline Services. They would inform the COPD team and any required intervention would take place. This system provided 24 hour medical care and response.

Outcomes:

Prior to development of the service, the average length of hospitalisation was 10 days. From 2004 onwards this reduced to five and a half days. Based on a clearly significant 50% reduction the trial was extended and then mainstreamed and budgeted for each financial year.





Qualitative benefits

A qualitative questionnaire showed that patients and carers (once familiar with the technology) felt less anxious and more in control of their condition and they complied with prescribed therapies. Their self-esteem increased and this led to better self-management. Reduced hospital stays lessened the risk of hospital acquired infections. For health professionals – monitoring at home prevents longer hospital stays, prevents traditional bed blocking, and provides cost savings for the Trust. Early diagnosis and intervention can prevent deterioration in a patient's condition, reducing hospital stays, GP visits, nurse visits and drug costs. Telemedicine offers an accurate and quicker way of monitoring patients who are chronically ill.

2. Telemedicine: - Unplanned Care Versus Planned and Co-ordinated Care An evaluation & research summary document written and researched by D.M.Taylor RGN (Dip) January 2006

A telemedicine pilot scheme undertaken by Medway Primary Care Trust and Medway Council Social Services began with the purchase of five telemedicine monitors. Three were used by the Rapid Response Team, and one by a GP. One was used in a nursing home. Thirty-one patients took part in the pilot, all of whom had unstable medical conditions (unstable blood pressure/pulse rate; known unstable heart conditions or early hospital release). The pilot study ran from August 2004 to September 2005. The aim of the study was to assess social and financial benefits of using telemedicine in a community care setting.

Qualitative outcomes (from a patient satisfaction survey):

- Treatment in own home saved travelling time and expense;
- Family visits made easier;
- Patients felt more involved in their treatment, creating peace of mind;
- Nearly all patients believed their condition was monitored more frequently resulting in quicker medical intervention if their condition deteriorated.

Quantitative outcomes

- A total of 133 hospital bed days saved;
- A total of 117 nursing hours saved;
- A total of 8 hours and 40 minutes GP time saved.

The study does not take into account practice nurse, community nurse and other practice staff financial savings.

In terms of the pilot in the nursing home - ten of the fifteen patients in this setting were stabilised with no intervention required. Hospital bed days saved as a result of telemedicine – 127. nursing

hours saved – 112. One very significant benefit that arose as a result of the nursing home pilot was with regard to a patient with unstable cardiac issues. Readings from a telemedicine monitor given by the GP to his hospital consultant, identified when the patient had stabilised. The consultant was able to organise a total hip replacement without the need for a lengthy hospital pre operative assessment. This demonstrates the potential for telemedicine to help the pre assessment process by aiding primary care and decreasing hospital care involvement.

Over 90% of NHS care is given outside hospitals, predominantly in a primary care and community setting. An estimated 17.5 million people with long term conditions receive treatment in primary care. The potential for significant savings can be appreciated by extrapolating the data from the community pilot – of sixteen patients, only four needed a GP visit. Nine had medication altered as a result of the information received via the telemedicine monitor. Three were identified as stable through monitoring and no intervention was required.

3. Argyll and Bute (Sector: Independent Living)

The driver

An estimated 16.3% of the population in Scotland is over 65. 7.5% are over 75. These figures are increasing, putting a significant amount of pressure on health and social care service providers. In Argyll and Bute, the number of pensionable people is higher than the national average.

Argyll and Bute council produced a Telecare Strategy in partnership with a number of local agencies to develop telecare services to support older people at home and promote independence. Telecare is mainly being used for people who have long-term health conditions, are frail and at risk of falls and have memory difficulties.

Patient Case Study

A Patient with a cognitive condition was left with memory problems and, on leaving hospital, needed to live with a relative. The patient was returned to independent living with a care package that included visits from support staff and telecare solutions comprising:

Telecare sensors facilitating the collection and transmission of data that build up a detailed picture of a person's activities so that emerging problems can be identified before developing into a serious issue. Examples – electrical useage sensors placed on appliances, combined with movement sensors can identify how long the patient is immobile and how often meals and hot drinks are being prepared. Areas monitored can include – bed, doors, kettle, cupboards, bathroom, living room chair and refrigerator. Data can be sent to a monitoring station and can also be transmitted to family members. Parameters can be set and patterns of behaviour monitored.

4. Chester (Sector: Chronic Disease Management)

The driver

Chronic Obstructive Pulmonary Disease (COPD) is one of the most common respiratory diseases in the UK. It is estimated there are c.3 million people in the UK with this condition. The Countess of Chester Hospital alone has 65,000 yearly attendances to A&E. Community nursing visits cost £2 million and NHS transport £18.4 million. Western Cheshire Primary Care Trust needed to develop a new approach to coping with long term chronic medical conditions and the PCT approached ChesterCare about developing a telehealth pilot.

The pilot

A six month pilot using telehealth technology to support patients in their own homes with several chronic medical conditions including Congestive Heart Failure (CHF), chronic kidney failure, angina, hypertension/hypotension, Diabetes, and COPD. A central triage station was created to receive confidential patient information from the telehealth monitors. Patients recorded vital signs from the comfort of home. The data was then made available to the appropriate health professionals.

Outcomes

Community matrons in Cheshire manage a group of around 50 to 80 patients and they can visit around three patients a day. ChesterCare staff take around 1.5 hours a day to collate the results from 10

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patients. Quote from one Community Matron – “telehealth helped to reduce the length of visits as all observations were already done”.

5. Gloucestershire County Council (Sector: Health, Housing & Social Care)

The driver

Gloucestershire is expected to see a 52% rise in the 75 and over group, and 76% in the 85 and over group by 2025. In addition, the dependency ratio – ie, the ratio of people of working age to those who have retired – is set to fall to 3:1 within the next 20 years, compared with 4:1 at the turn of the 21st century. This is likely to mean a significant shortfall in both the financial and human resources needed to provide support.

The project

In May 2006, the Gloucestershire Telecare project, TeleG, was launched using the DH Preventative Technology Grant. An analysis of the two year project revealed potential savings to Health and Social Care of over £4 million across 368 service users. Specifics:

The external evaluator of the project concluded that with the end of the PTG, it was necessary to mainstream the telecare service, and that it should be expanded to a total of 2000 users within 18 months. The evaluator’s report also found that although annual predicted costs would total c.£800k per annum, (see below), immediate savings of at least £1 million would be made. The figure was based on a conservative projection of delayed admissions to hospital or residential care resulting in a saving of £10 per person per week (extrapolated evenly across the service):

Breakdown of annual costs	
Equipment	£200,000
Installation, Maintenance etc.	£160,000
Prescription and Administration	£250,000
Monitoring	£200,000
Total	£810,000
This equates to £405 per service user – less than the cost of one week in residential care.	

Cost Saving Analysis

Savings generated over the two life of the project, based on 55 users. Where it was possible to identify a clear cost saving for a service user, they were averaged as follows:

Average nett savings to Health per user = £7,871.79

Average nett savings to Social Care per user = £13,292.37

Total nett savings across 55 service users = £405,088.39

Breakdown of cost savings from 55 users		
Social Care	%	£ Saving
Residential Care	71	£198,189

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Meals on Wheels	5	£13,957
Home Care	19	£53,036
Intermediate Care	5	£13,957
Total Social Care	100	£279,139
Health		
Ambulance Call Outs & Hospital Admissions	100	£125,949
Total		£405,088

Extrapolating these average cost savings across the 368 people that are currently using the telecare service, Gloucestershire County Council have calculated the potential savings to be £4,273,645.90 over the two year life of the project. On this basis, if the service is expanded to 2000 users, as recommended by the evaluator, the potential annual cost savings could be £11,613,168.37.

Based on the pilot, Gloucestershire County Council and its partner agencies intend to develop and mainstream telecare services, supplying telecare wherever it is needed by 2010.

6. Herefordshire Council – Intermediate Care

(Source – New Services, Specialist Intermediate Care Roving Night Service Just Checking: One-Year Evaluation Report February 2008)

In 2007, Herefordshire Council and Herefordshire PCT developed a transformation plan to modernise adult services, including the improvement of intermediate Care. A key priority for Intermediate Care was the development of twenty-four hour care services incorporating new developments in Assistive Technology as part of a range of new services to support individuals to remain living in the community and reduce the need for care home placements. From January 2008, a range of new services were piloted in South Herefordshire. The aim was to reduce or delay admissions to long-term care, thereby saving money that could be reinvested in care services. The evaluation report into the pilot looks at the longer-term outcomes for 37 individuals who were provided with support during the first three months. It explores the outcomes from service intervention at the three month, six month and one year stages.

Some of the quantitative outcomes:

- The total cost of investment in new services for the 37 identified individuals was £79,363. This produced potential savings of over £180,000 in the first year by mitigating the Council's liability for nursing or residential care
- A 43% reduction in the residential/Nursing Homes admission rates for Older People Mental Health services in the pilot area during the first three months of the project
- 78% of service users at risk of long-term Residential or Nursing care admission still living at home at the six month stage of the project
- 57% (21 out of 37) in the above group, still at home after one year
- 63% supported by the Specialist Intermediate Care service who still live at home, continue to have low-level care needs at the one year stage indicating that they will continue to live in the community

7. Leeds (Sector: Health/Managing LTCs – focus COPD)

A six month telehealth project began in October 2006. The aims included:

- Improve the quality of life of patients with LTCs;
- Reduce unplanned hospital admissions for COPD patients;
- Reduce the length of stay in hospital for COPD patients;
- To achieve cost savings.

Result: over the six month period, the nursing team saved approximately 55 nursing visits.

8. London Borough of Newham (Mainstreaming Telecare)

In Newham, 17% of people are living with a limiting long-term illness, and there are 13,000 older people households. Newham Advanced Telecare (NeAT) – an alliance between Newham Council, Newham Homes, Newham Primary Care Trust, the Metropolitan Police, and Newham Voluntary Services Consortium - was formed in 2005 to enable people to live independently in the community for as long as possible. NeAT began rolling out telecare in late 2005 and set out to expand its service, which at the time had around 400 users, to achieve the following targets for telecare installations:

- March 2007 – 1400 people
- March 2008 – 3200 people

Some of the things the scheme achieved:

- Reduction in the movement of people from sheltered housing to residential care;
- For people in residential care, it improved supervision and, in some cases, reduced costs;
- For residents with complex needs, it eliminated obtrusive monitoring.

Newham moved from the pilot into becoming one of the three Whole System Demonstrator sites.

9. Northamptonshire County Council (Dementia Care)

Phase two of the “Safe at Home Project” ran between June 2002 and March 2004. 233 individuals with dementia were given various items of assistive technology. This group was compared with 173 people from Essex of a similar profile who were not given the technology.

Results

70% of 123 carers responded to a postal survey which measured levels of stress before and after the project. 87% felt the project had made a difference in their sense of concern for the safety of the person they cared for. Almost half felt the project had improved the confidence of the user in their ability to look after themselves properly.

Cost effectiveness:

Total Safe at Home project costs over the 21 months period - £286,853.46
Residential Care
Safe at Home users 1,590 weeks = £477,270
Essex service users 2,524 weeks = £1,020,054
Nursing Care
Safe at Home users 38 weeks = £15,911
Essex service users 226 weeks = £127,356

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<i>Hospital</i>
Safe at Home users 269 weeks = £568,440
Essex service users 604 weeks = £1,705.83
The equivalent saving over the life of the project was £1,504,773

10. Ireland (Sector: Connected for Health/telehealth)

Northern Ireland

The Department for Health announce that Northern Ireland will develop a new European Centre for Connected Health, with the allocation of £46 million to bring Telehealth solutions to 5000 people by 2011. They have set an ambitious target of reducing the number of hospital admissions by 10% in the first year and by 50% by 2011. The development will initially focus on:

- Chronic Obstructive Pulmonary Disease (COPD)
- Chronic Heart Failure (CHF)
- Diabetes

Health and Social Care Trusts aim to change the way care is delivered, moving away from the traditional care model towards a more person centred care in the community model.

Ulster

News release 27th January 2009 – a new world class cross-border Centre for Intelligent Point of Care Sensors, to be operated jointly by Ulster and Dublin City University (DCU), will drive all-island research and development in the sector. The Department of Employment and Learning (NI) has awarded Ulster £2 million to develop the collaboration.

11. Sheffield Primary Care Trust (Telehealth)

The driver

The annual cost to the NHS of treating COPD is £818m. Sheffield's population has a high prevalence of COPD. In some areas of the city, up to 8% of the 550,000 patients within the PCT have the condition, and in the city centre the figure is 3% - three times higher than the national average. This is due to regional factors, and the area's history of occupational exposure from the steel industry. The c.2000 COPD related hospital admissions a year, put a heavy burden on healthcare resources in Sheffield.

The pilot

Telehealth solutions were adopted to offer COPD patients greater support in the community. A telehealth pilot was commissioned to monitor patients with COPD within an early discharge scheme in their own homes. Telehealth solutions were rolled out to 30 high-risk patients for 5 months.

Results

- COPD hospital admissions decreased by 50% saving the PCT £30,000 - £40,000
- On the basis of £2000 per admission, saving 50 admissions per month could save the PCT £1,200,000 per year
- During the pilot, home visits were reduced by 80%

12. Stockton-on-Tees borough Council (Telecare service)

Stockton-on-Tees Borough Council covers a population of 186,000 and the number of over 65's is set to increase by a significant 46% by 2021. c.20% of the population have a limiting long-term condition.

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The Preventative Technology Grant was a catalyst for change, and a subsequent evaluation was carried out to look at how the Council went about developing a mainstream telecare service jointly funded by the Council and the PCT.

Telecare installations resulted in delayed care/residential care admissions (47%); prevention of care home admission (26%); no economic benefits (12%); reduced domiciliary care hours (8%).

A draft evaluation showed that total savings for 150 users (based on 90 initial reviews) would be an estimated net saving of £220,954 pa.

13. Scotland (Source: Evaluation of the Telecare Development Programme Executive Summary)

York Health Economics Consortium carried out this evaluation on behalf of the Scottish Government and published the final report, from which the following text is drawn, in January 2009:

The National Telecare Development Programme (TDP) was launched in Scotland in August 2006. It aimed to help more people in Scotland to live at home for longer by promoting the use of Telecare. It was managed by the Scottish Government's Joint Improvement Team (JIT) which received £8.35m to help 32 Scottish Partnerships to develop telecare services during 2006-08. Initially, Partnerships planned to implement a total of 73 projects, 51 of which were in operation by the end of March 2008 (the period up to which the evaluation reported). Following are the key findings:

Reduction in the number of avoidable admissions and readmissions to hospital:

- By the end of 2007/08, 18 partnerships reported having avoided unplanned hospital admissions
- The number of unplanned hospital admissions reduced by c.1,220 (and by 13,870 bed days)
- The main beneficiaries were old people

Increase in 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
- The number of delayed discharges was c.517, with 5,668 bed days saved
- 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

Reduction in the cost of care homes:

- By the end of 2007/08, 23 Partnerships reported having avoided care home admissions
- The number of care home admissions was reduced by c.518 (and by 61,993 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

Table E.1: Achieve efficiencies from the programme investment in telecare

	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	30.0%
Reduced care home admissions	£3,421,621	30.7%
Reduced nights of sleepover care purchased	£557,119	5.0%
Reduced home check visits	£1,796,039	16.1%
Locally identified efficiencies, namely reduced waking nights	£301,000	2.7%
TOTAL	£11,151,190	100.0%

14. Scotland – Seizing the Opportunity: Telecare Strategy 2008-2010

Following on from the TDP 2006-2008, the Scottish Government have committed a further investment of £8m for telecare funding in 2008-9 to 2009-10.

Scottish local authorities spend over £1 billion annually on care in the community, and the NHS spends a further £1 billion on community based health services. Prior to the 2006-08 TDP, local care partnerships were already supporting around 137,000 service users with some form of telecare. The 06/08 programme increased the numbers able to maintain themselves at home by a further 4,000 whilst generating significant efficiency savings. The 08/10 programme, makes £4m available in 08/09, and the same again in 09/10 to be used to secure further mainstreaming of telecare services. The bulk of the funding will be made available to local health and care partnerships.

Expected efficiency savings:

Core efficiency savings from the Telecare Development Programme 2007-8 to 2009-10

Over the period 2007-10, a minimum of:

- 46,500 hospital bed days saved by facilitating speedier hospital discharge
- 225,000 care home bed days saved by delaying the requirement for people to enter care homes
- 46,000 nights of sleepover care and 905,000 home check visits saved by substitution of remote monitoring arrangements.

Collectively, these savings are valued at around £43 million – an anticipated benefit to programme funding cost ratio of 5:1.

Main Case Study: Kent County Council (Sector: Health & Social Care/Active Living Project)

The driver

Kent County Council is the largest non-metropolitan local authority in England, with a resident population of more than 1.3 million and a greater than average proportion of people aged over 65. As the age profile increases, so do the long term health issues that come with it. Peter Gilroy, the Chief Executive of Kent County Council, is committed to rolling out telecare across Kent as a mainstream service.

The Active Living Project

The initiative for the development of Telecare in Kent Social Services came from senior councillors and senior managers who acted as “product champions”. They felt that Telecare would help Social Services achieve some of its aims and objectives. It was part of a wider strategy to create a broad and integrated service for people living in Kent, with Kent CC playing a lead role in bringing together health and social care support.

The Active Living Project, aimed to pilot a new generation of telecare solutions designed to support the ability of older and disabled people to feel more secure and confident in their own homes. The solutions piloted were second generation telecare systems that built on social alarm systems that were already in use at the time. Telecare was piloted across three sites – East Kent, Mid Kent and West Kent, with just over 300 users involved. Telecare equipment was purchased, and systems put in place in order that it could be used effectively. The system had three main components:

- Assessment and installation (including initial referral and follow-up);
- Monitoring Service: The Call Centres (an agency received and processed the calls);
- Response – a mechanism was put in place for providing physical response to calls.

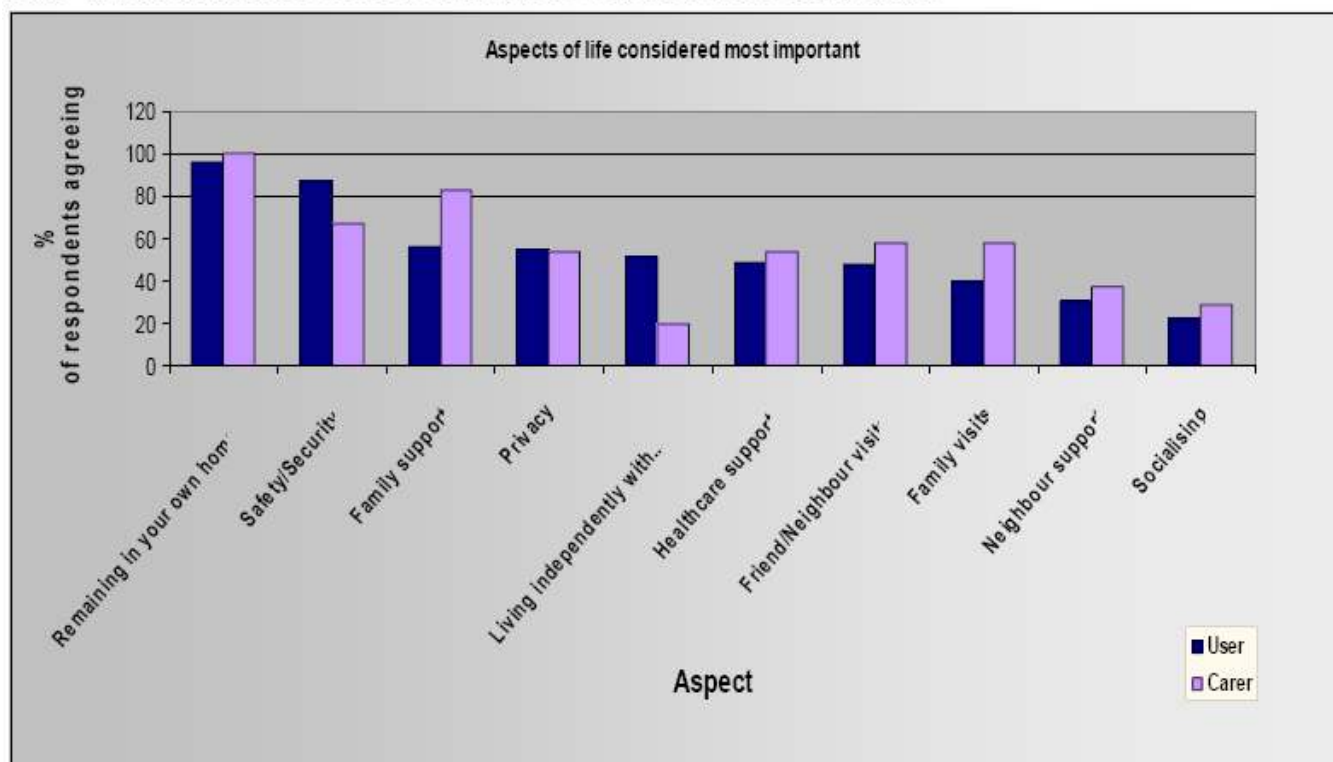
The University of Kent’s Centre for Health Services Studies (CHSS) carried out a full evaluation of the pilot and its final report was published in December 2006 - (http://www.kent.ac.uk/chss/docs/telecare_final_report.pdf).

Some of the qualitative data

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

Table 17: Showing aspects users and carers considered most important



Recommendations arising from the evaluation (from source document):

- A successful telecare service should serve as a catalyst for improved service integration;
- Efforts should not just focus on technology. It is important to recognise and assess the human elements of the system. Implementing telecare requires appropriately qualified staff to recruit service users; the identification of appropriate monitoring centres; and the development of an appropriate response mechanism. If not properly handled, telecare could actually increase the pressure on carers;
- Local ownership in mainstream services is key. Raising awareness is not enough. Mainstream services may resist innovations if not locally owned;
- A priority of long-term planning is to better understand how the developing service will need to keep pace with innovations in technology. It is important to have product champions who can support the continued prioritisation of Telecare in Kent;
- It is important to ensure the development of telecare is linked to broader developments. Careful targeting of the service is required. For instance, it may be that service users do not need an all encompassing service; they may be able to utilize a community alarm infrastructure;
- A partnership approach is absolutely crucial. Health services and practitioners are a key part of the wider infrastructure supporting integrated Telecare services;
- Small scale trials can demonstrate potential benefits of telecare, but cannot demonstrate full costs and benefits. It is also difficult to separate out the effects of different factors. Large trials that look also at the variables are therefore key. Whilst large scale trials are expensive and can give rise to ethical issues, it is important that social care develops an evidence base to justify its technologies.

The last of these recommendations made it clear that a large trial was absolutely necessary in terms of adding significantly to the evidence base for Telecare. At that time, there were no large-scale studies of Telecare using randomised control trials to assess the impact of Telecare on users and carers. The evaluation team said that it was important for Kent to look at the possibility of contributing to a large trial. Following this:

On December 21st 2006, the Department of Health launched a competition to select demonstrator

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sites for its Whole System Long Term Conditions Demonstrator Programme. The £31m programme was designed to deliver a large, randomised, controlled trial to investigate whether integrated health and social care, using assistive technologies, would benefit individuals and their carers, whilst also providing clinical gains and cost-effective care. It is believed to be the largest trial of telecare and telehealth anywhere in the world. (Source: TKN).

Kent became one of the three Whole System Demonstrator pilot sites in May 2007. The other two are Cornwall and Newham.

The Whole System Demonstrators

From the DH website:

The WSD Programme

The WSD Programme is driven by the need to understand the true benefit of integrated health and social care supported by advanced assistive technology (telehealth and telecare). The key to proving the business case is a robust evaluation. Evaluation will be carried out by a consortia of UK universities. The evaluation will be extremely robust and has been designed as a Randomised Control Trial, focusing on individuals with Chronic Pulmonary Disease (COPD), Heart Failure and Diabetes, and adults with social care or health and social care needs at risk of hospital admission. The evaluation will look at the impact on emergency admission rates & bed days, patient/carer experience and quality of life and the impact on Primary Care. The evaluation will be complemented by structured lessons learnt to help inform future mainstreaming of this activity.

All 3 sites are currently recruiting GP practices to take part in the programme, through targeted information, practice visits and roadshows. There will be over 7000 telecare and telehealth installations in individual's homes, making the programme the largest trial of telecare and telehealth in the UK to date. Each site will recruit over 1000 patients/users for telehealth and over 1,000 patients/users for telecare.

Evaluation presentation from the first dissemination event in January 2009:

http://www.wsdactionnetwork.org.uk/past_events/wsdan_roadshow_22.html

For the two year update on the status of the Whole System Demonstrators, refer to document written by Katy Lethbridge, SEHTA.

The Third sector

The Disabled Living Foundation <http://www.dlf.org.uk/>

Is a national charity that provides free, impartial advice about all types of daily living equipment for disabled adults and children, older people, their carers and families. They have a large section called Living Made Easy within their remit:

'Living Made Easy' <http://www.livingmadeeasy.org.uk/telecare/> aims to provide impartial advice and information for older and disabled people, carers and care professionals. The website has a tab dedicated to telecare and offers some advice about the most suitable telecare devices for peoples' given circumstances, including safety, security, dexterity, hospital discharge and mental health issues. Information is given about how to obtain telecare, gives case studies and provides references and links to external sites.

The **at dementia** website <http://www.atdementia.org.uk> is managed by the Trent Dementia Services Development Centre, a registered charity. It provides information on sources of funding for telecare, the implementation of telecare and the National Framework Agreement for telecare among other information on the uses and benefits of telecare.

London Telecare <http://www.londontelecare.com/> is the organisation representing the Telecare services operated by most of London's 32 boroughs. It is dedicated to advertising these services across London and the Home Counties, using a combination of posters, leaflets and exhibition materials.

Telecare Aware <http://www.telecareaware.com> is a news service about the technology, products, equipment and services (called telecare and telehealth) that help older and disabled people remain independent at home for longer.

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The **TSA** is the representative body for the telecare industry in the United Kingdom. The TSA is a not-for-profit, membership based organisation wholly owned by its members, which aims to promote and support the telecare industry and highlight the benefits of telecare for service users, their friends, family and carers, and service commissioners. The TSA has almost 300 members, including Local Authorities, Registered Social Landlords and private sector suppliers. <http://www.asap-uk.org>

Carers UK is the leading campaigning, policy and information organisation of and for carers. Carers UK (a registered charity) continues to make a difference to carers' lives by: campaigning for a better deal for carers; informing carers of their rights and what help is available; training and advising professionals who work with carers; working across the UK through its membership and networks of branches and affiliates. For more information, visit www.carersuk.org. They campaign that telecare can support carers as well as those needing care and is a cost-effective alternative to the provision of a carer in some cases. (Also has branches in Scotland and Northern Ireland)

Counsel and Care is a national charity getting the best care and support for older people, their families and carers. They do this by providing advice, information and financial support and by influencing future policies, services and funding. The following document, published in Feb 2009 and reported at Counsel and Care's annual conference, gives detailed information about the organisation's research findings,. The main finding of this is that for every pound spent on telecare, five pounds could be saved on expensive hospital and residential care*

http://www.counselandcare.org.uk/assets/library/documents/11_Investing_in_telecare_25.2.09.doc

*Based on evidence from Scotland – independently evaluated by York University – showing that telecare in people's homes can reduce the number of days needed in hospital stays and delay entry to residential care as well as saving on home checks and visits. The savings equate to £5 for every £1 invested in installing a range of electronic communications equipment in older people's homes.

Age Concern seems to support the CSIP reports and advertises links to them but no specific telecare work being undertaken by Age Concern could be found. <http://www.ageconcern.org.uk/AgeConcern/aab-housing-communities-and-crime.asp>

Sources of information

- The **ICT & Ageing – Users, Markets and Technologies* study funded by the European Commission
- www.tunstallgroup.com
- *Telemedicine – The way forward in chronic disease management?* A clinical evaluation & research document written and researched by D.M.Taylor RGN (Dip)
- *Telemedicine: - Unplanned Care Versus Planned and Co-ordinated Care* An evaluation & research summary document written and researched by D.M.Taylor RGN (Dip) January 2006
- Herefordshire Council/NHS Herefordshire - New Services, Specialist Intermediate Care Roving Night Service Just Checking: One-Year Evaluation Report February 2008
- Evaluation of the Telecare Development Programme Executive Summary – York Health Economics Consortium
- Seizing the Opportunity: Telecare Strategy 2008-2010 – Scottish Government (JIT)
- *Piloting Telecare in Kent County Council: The Key Lessons Final Report – 2006*
The University of Kent's Centre for Health Services Studies (CHSS) (http://www.kent.ac.uk/chss/docs/telecare_final_report.pdf).
- Department of Health website
- DH – Integrating Community Equipment Services - Telecare
- WSDAN - http://www.wsactionnetwork.org.uk/past_events/wsdan_roadshow_22.html
- Whole System Demonstrators: Two Years On – Katy Iethbridge, SEHTA
- The Disabled Living Foundation <http://www.dlf.org.uk/>
- Living Made Easy <http://www.livingmadeeasy.org.uk/telecare/>
- at dementia <http://www.atdementia.org.uk>

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- London Telecare <http://www.londontelecare.com/>
- Telecare Aware <http://www.telecareaware.com>
- The TSA <http://www.asap-uk.org>
- Carers UK www.carersuk.org
- Counsel and Care
http://www.counselandcare.org.uk/assets/library/documents/11_Investing_in_telecare_25.2.09.doc
- Age Concern <http://www.ageconcern.org.uk/AgeConcern/aab-housing-communities-and-crime.asp>

Sources of reference:

- DH – Impact Assessments for the Health Bill
- Telecare outcomes and mainstreaming 24 December 2008 – Telecare LIN
- Improving Care for People with Long-Term Conditions – University of Birmingham
- Implementing Telecare – Audit Commission Report 2004
- Don't stop me now – Audit Commission Report July 2008
- Care Services Improvement Partnership (CSIP)
- ICT for Health and i2010: Transforming the European healthcare landscape (European Commission Information Society and Media)
- eHealth priorities and strategies in European countries (eHealth ERA report March 2007)
- ICTRI – Integrating telecare systems for chronic disease management in the community: what needs to be done? Professors Carl May, Frances Mair, and Anne Rogers et al

Further links for information on telecare activity:

www.dhcarenetworks.org.uk/telecareoutcomes - information from 2008 data collection and themed reports

www.dhcarenetworks.org.uk/telecareprofiles - profiles of 150 social care authorities based on data collection in 2008

www.dhcarenetworks.org.uk/telecareservices - over 300 routes into telecare around the country

www.dhcarenetworks.org.uk/telecarenewsletters - See May 2009 for list of telehealth links to PCTs

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2 Appendix 2: Survey of Companies Involved in Telecare by Michelle Bentley, University of Southampton

Company	Region	City	Address	Postcode	Area	Web Site	Employees Last Year	Revenue Last Year	Last Reporting Year
ADASTRA SOFTWARE LIMITED	Canterbury - Medway- Tonbridge	Ashford	Unit 4 / Eurogate Business Park	TN24 8SB	Central monitoring service	www.adastra.co.uk	134	10200	2006
AMICUS RESPONSE	Kent	Sittingbourne	PO Box 322	ME9 8PQ	Central monitoring service	http://www.amicus- response.co.uk/index.cfm?articleid=3			
ANCHOR TRUST	Inner London	London	ashcombe Court / Woolsack Way	WC2E 9ES	Central monitoring service; Residential	http://www.anchor.org.uk/index.asp			
ASAS PLC	Inner London	London	Astra House, Arklow Road	SE14 6EB	Information technology				
ATOS ORIGIN UK	Inner London	London	4 Triton Square, Regents Place	NW1 3HG	Information technology	http://www.uk.atosorigin.com/en-uk/			
ATS MediRent	Reading - Slough	Bracknell	Magnum House, Cookham Road	RG12 1RB	Audio/Visual				
AVM	Inner London	London	Caveat House, 14 Lovat Lane	EC3R 8DZ	Audio/visual	http://www.avmachines.co.uk/home.html			
AVT SYSTEMS	Inner London	London	44-48 Paul Street	EC2A 4LB	Audio/visual	http://www.avt-systems.co.uk/index.php			
AXON (UK) LIMITED	Chelmsford - Colchester - Southend-on- Sea	Billericay	Lakeview House / 4 Woodbrook Crescent	CM12 0EQ	Remote monitoring	www.axonuk.org			2006
AZTEC CENTRE	Greater London South	Croydon	28 Boulogne Road / Thornton Heath	CR0 2QT	Other support				
BASIC COMFORTS LIMITED	Reading - Slough	Reading	16 Beta House, Southcote Road	RG30 2AR	Information technology	http://www.basiccomforts.co.uk/		15	2005
BIODEO LTD	Inner London	London	9 Wimpole Street	W1G 9SR	Consultancy	http://www.biodeo.com/index_en.html			

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Company	Region	City	Address	Postcode	Area	Web Site	Employees Last Year	Revenue Last Year	Last Reporting Year
BOX TECHNOLOGIES LIMITED	Oxford	Thame	20 Thame Park Business Centre / Wenman Road	OX9 3XA	Information technology	www.boxtechnologies.com	59	19235	2007
CARDIAK LIMITED	Inner London	London	21 Wilson Street	EC2M 2TD	Other support				2006
CAS Services	Reading Slough	Basingstoke	Midpoint Alençon Link	RG21 7PP	Information technology				
CASA LIFELINE	East Sussex	Battle	The Watch Oak	TN33 0YA	Central monitoring service	http://www.rotherhomes.org.uk/index.cfm?articleid=4363			
CERNER LTD	Inner London	London	6th Floor, The Point, 37 North Wharf Road	W2 1AF	Information technology	http://www.cerner.com/public/default.asp?id=1034			
CERRUS INTERNATIONAL LIMITED	Guildford	Camberley	The Coliseum, Riverside Way	GU15 3YL	Remote monitoring	http://www.cerrus.co.uk/			
CIRRUS COMMUNICATION SYSTEMS LIMITED	Southampton	New Milton	11 Queensway	BH25 5NR	Central monitoring service	www.cirruscom.co.uk	133	10244	2006
COPERNICUS DIAGNOSTICS	Inner London	London	178 Piccadilly, 4th Floor	W1J 9EN	Remote monitoring				
DATASCOPE MEDICAL CO. LIMITED	Cambridge Peterborough	Huntingdon	Lakeview Court, Spitfire Close /	PE29 6XR	Production/Supply	www.datascope.com	31	9664	2006
DATASOFT MEDICAL	Inner London	London	53 Frensham Drive	SW15 3EA	Audio/visual	http://www.datasoftmedical.com/			
DOCOBO LTD	Guildford	Bookham	21 High Street	KT23 4AA	Remote monitoring	http://www.docobo.co.uk/			
FIRST CONNECTIONS LIMITED	Reading Slough	Basingstoke	5 Faraday Office Park / Faraday Road Basingstoke	RG24 8QQ	Audio/Visual	www.firstconnections.co.uk			2006
FOUNDATION FOR ASSISTIVE TECHNOLOGY	Inner London	London	12 City Forum / 250 City Road	EC1V 8AF	Other support	www.fastuk.org	5		2006
FREESCALE SEMICONDUCTOR	Buckinghamshire	Aylesbury	69 Buckingham Street	HP20 2NJ	Production/Supply	http://www.freescale.com/			

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Company	Region	City	Address	Postcode	Area	Web Site	Employees Last Year	Revenue Last Year	Last Reporting Year
FUJITSU HEALTHCARE	Inner London	London	22 Baker Street	W1U 3BW	Remote monitoring	http://www.fujitsu.com/uk/			
FUJITSU SIEMENS COMPUTERS LIMITED	Reading Slough	Bracknell	Fsc Campuse / The Boulevard Cain Road	RG12 1HH	Information technology	www.fujitsu-siemens.com	278	378613	2006
FVC.COM	Aylesbury	Beaconsfield	22, Wycombe End	HP9 1NB	Audio/Visual	www.fvc.com			
GN RESOUND LTD	Oxford	Bicester	1 Landscape Close / Weston On The Green	OX25 3SX	Audio/Visual	www.gnresound.co.uk	103	16193	2006
HANOVER HOUSING ASSOCIATION	Greater London North	Middlesex			Central monitoring service; Residential	http://www.hanover.org.uk/			
HITACHI	Berkshire	Maidenhead	Lower Cookham Road	SL6 8YA	Audio/Visual	http://www.hitachi.co.uk/about/index.html			
HONEYWELL	Berkshire	Bracknell	Honeywell House, Arlington Business Park	RG12 1EB	Production/Supply	http://www.honeywell.com/sites/uk/			
HUGH STEEPER LIMITED	Canterbury Medway-Tonbridge	Rochester	Medway City Estate / 51 Riverside / 2 meadway City Estate	ME2 4DP	Other support	www.rslsteeper.co.uk		22611	2006
IATRO MEDICAL SYSTEMS	Inner London	London	35 Quagly Walk	SE3 9EJ	Production/Supply				
IBM	Southampton	Portsmouth	PO Box 41, North Harbour	PO6 2AU	Audio/Visual; Information Technology	http://www.ibm.com/uk/en/			
IMETRIKUS LTD	Guildford	Wisley	5 The Courtyard	GU23 6QL	Remote monitoring	http://www.imetrikus.com/index.html			
INFODISP	Guildford	Bordon	Information & Display Systems Limited, 12 Woolmer Way	GU35 9QF	Audio/Visual	www.infodisp.com			

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Company	Region	City	Address	Postcode	Area	Web Site	Employees Last Year	Revenue Last Year	Last Reporting Year
INVICTA	Kent	Sevenoaks	Basted House / Harrison Road / Borough Green	TN15 8PB	Central monitoring service	http://www.invictatelecare.co.uk/			
iPLATO	Inner London	London	Canalot Studios / 222 Kensal Road	W10 5BN	Information technology	http://www.iplato.net/			
ISEEUGLOBAL Ltd	Reading - Slough	Bracknell		RG12 1WA	Information technology	www.iseeuglobal.com			
ITELECARE	Reading - Slough	Wokingham		RG40 3PJ	Remote monitoring	www.itelecare.co.uk			
KARTEN NETWORK LTD	Guildford	Godalming	Ashcombe Court / Woosack Way	GU7 1LQ	Other support	http://www.karten-network.org.uk/			2006
LG ELECTRONICS	Reading - Slough	Slough	LG House, 250 Bath Road	SL1 4DX	Audio/Visual	http://uk.lge.com/index.jhtml			
LIFEWATCH UK LIMITED	Inner London	London	22 Upper Wimpole Street	W1G 6NB	Other support				2006
LIVING INDEPENDENTLY LIMITED	Southampton	Winchester	New Barn Court / New Barn Lane	SO21 2PP	Safety/security	www.quietcaresystems.com			2006
MADDISON LTD	West Sussex	Fittleworth	Walnut Tree Yard, Lower Street	RH20 1JE	Production/Supply	http://www.maddison.co.uk/home/			
MASCOT TELECARE	Great London South	Morden	Gifford House, 67c Hellier Avenue	SM4 6HY	Central monitoring service	http://www.mascot-telecare.org.uk/default.asp			
MEDEQUIP ASSISTIVE TECHNOLOGY LIMITED	Greater London South	West Drayton	Unit 2 Summit Centre / Skyport Drive Harmondsworth	UB7 0LJ	Production/Supply	www.medequipuk.com	218	26830	2006
MEDIAGRID PLC	Reading - Slough	Reading	Unit 8C / Castle End Business Park	RG10 9XQ	Remote monitoring		9	39	2007
MEDICA GROUP	Great London South	Surbiton	1-4 The Crescent	KT6 4BN	Remote monitoring	http://www.medicagroup.co.uk/index.htm			

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MEDIONICS	Berkshire	Maidenhead	Long Reach House / High Street, Hurley	SL6 7LT	Remote monitoring	http://www.medionics.com/			
MICROSOFT	Reading Slough	Reading	Thames Valley Park,	RG6 1WG	Audio/Visual; Information Technology	www.microsoft.com			
MOON Communications International Limited	Brighton	Brighton	Quuens Park Villa, 30 West Drive	BN2 2GE	Other support	www.mooncom.co.uk			
MOTOROLA	Reading Slough	Basingstoke	Crockford Lane, Chineham Business Park	RG24 8WQ	Audio/Visual	http://www.motorola.com			
MULTISENSE COMMUNICATIONS LTD	Aylesbury	High Wycombe	Red Lion House / 600 London Road	HP11 1EX	Audio/Visual	www.multisense.co.uk			2006
NAVIGIL LTD	Redhill	Dorking		RH4 1AR					
NESTOR CENTRAL	Guildford	Egham	First Floor, Allen House, Station Road	TW20 9NT	Other support	http://www.nestor-healthcare.co.uk/			
NITTO UK	Berkshire	Thatcham	Berkshire Business Centre, Berkshire Drive	RG 19 4EW	Production/Supply	http://www.nittoeurope.com/			
ORTIVUS LIMITED UK	Southampton	Southampton	39-49 Commercial Road	SO15 1GA	Remote monitoring	www.ortivos.co.uk	4	769	2007
PA CONSULTING	Inner London	London	123 Buckingham Palace Road	SW1W 9SR	Consultancy	http://www.paconsulting.com/home/			
PANOSONIC	Berkshire	Bracknell	Panasonic House, Willoughby Road	RG12 8FP	Audio/Visual	http://www.panasonic.co.uk			
PATEX UK LTD	Greater London South	Bromley	21 East Street	BR1 1QE	Remote monitoring	www.airwave-technology.com			2007

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PHARMA COMMUNICATIONS LIMITED	Aylesbury	Amersham	42 Long Park	HP6 5LA	Other support			16	2007
PHILIPS	Guildford	Surrey	The Philips Centre Guildford Business Park	GU2 8XH	Remote monitoring	http://www.philips.co.uk/			
POSITION SYSTEMS LIMITED	Guildford	Farnham	4 Orchard Court / Church Street, Crondall	GU10 5QP	Safety/security	www.bloodhoundcomms.com			2005
POSSUM LTD	Buckinghamshire	Aylesbury	8 Farmbrough Close / Stocklake Park Industrial Estate	HP20 1DQ	Remote monitoring	http://www.possum.co.uk/index.html			
PROWELLNESS	Inner London	London	500 Chiswick High Road	W4 5RG	Other support	http://www.prowellness.com/?s=1			
QUALCOMM	Inner London	London	Waterfront (4th Floor), Hammersmith Embankment, Chancellors Road	W6 9RU	Audio/Visual	http://www.qualcomm.co.uk/			
RED ALERT LIMITED	Canterbury - Medway-Tonbridge	Ashford	3 The Courtyard Orbital Park / Sevington	TN24 0SY	Central monitoring service	www.redalertuk.com			2006
REMOTE CONNECTIONS LIMITED	Canterbury - Medway-Tonbridge	Deal	17 Mill Road	CT14 9AH	Other support	www.rconnections.com			2006
REMOTE DIAGNOSTICS TECHNOLOGIES LTD	Reading - Slough	Basingstoke	The Old Coach House, The Avenue, Farleigh Wallop	RG25 2HT	Remote monitoring	http://www.rdtltd.com/			
RICHMOND PAINSWICK LIMITED	Inner London	London	Suite 201 The Chambers	SW10 0XF	Residential		8	844	2006

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ROKE MANOR RESEARCH LIMITED	Guildford	Camberley	Faraday House / Sir William Siemens Square	GU16 8QD	Research	www.roke.co.uk	427	40352	2006
RSL STEEPER HOLDINGS LIMITED	Canterbury - Medway-Tonbridge	Rochester	Riverside Orthopaedic Center / 51 Riverside Medway City Estate	ME2 4DP	Safety/security	www.rslsteeper.com	458	29288	2006
SAMSUNG ELECTRONICS	Guildford	Chertsey	Samsung House, 1000 Hillswood Drive	KT16 0PS	Audio/Visual	http://www.samsung.com/uk/			
SCORPIO INFORMATION SYSTEMS LTD	Southampton	Hythe	20 Pylewell Road	SO45 6AR	Other support	http://www.ascibe.com/cgi-bin/ascibe/index.html			
SHARP	Reading - Slough	Uxbridge	4 Furzeground Way, Stockley Park	UB11 1EZ	Audio/Visual	http://www.sharp.co.uk/			
SIEMENS	Guildford	Camberley	Sir William Siemens Square, Frimley	GU16 8QD	Audio/Visual	http://www.siemens.co.uk/en/			
SIGNATURE SENIOR LIFESTYLE HOLDINGS LIMITED	Reading - Slough	Gerrards Cross	Shire House / West Common	SL9 7QN	Residential	http://www.signaturesl.co.uk/	145	1869	2006
SMARTSENSOR TELEMED LIMITED	Oxford	Didcot	Harwell Innovation Centre / Harwell International Business /	OX11 0QG	Remote monitoring	http://www.smartsensortelemed.com/		43	2006
SOS RESPONSE	Southampton	Winchester	14-30 Hyde Street	SO23 7TA	Remote monitoring	http://www.sosresponse.com/component/option,com_frontpage/Itemid,1/			
SPACELABS MEDICAL UK LIMITED	Inner London	London	110 Cannon Street	EC4N 6AR	Remote monitoring	http://www.spacelabs.com/	41	6039	2007

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SPECIALIST MEDICAL INTERNATIONAL LTD.	Redhill	Crawley	12 Gleneagles Court / Brighton Road	RH10 6AD	Remote monitoring				2006
SRS TECHNOLOGY LTD.	Buckinghamshire	Aylesbury	8 Farmbrough Close / Stocklake Park Industrial Estate	HP20 1DQ	Remote monitoring	www.srstechology.co.uk			2006
ST MICROELECTRONICS	Reading - Slough	Marlow	Planar House, Parkway, Globe Park	SL7 1YL	Production/Supply	www.st.com			
STAFFPLAN	Greater London South	London	4b Hillgate Place, 18-20 Balham Hill	SW12 9ER	Central monitoring service	http://www.staffplan.co.uk/			
SUNRISE OPERATIONS BANSTEAD LIMITED	Aylesbury	Beaconsfield	Crofton House / 16 Warwick Road	HP9 2PE	Residential	http://www.sunrise-care.co.uk/	67	4513	2006
SUNRISE OPERATIONS BASSETT LIMITED	Inner London	London	8th Floor / 68 King William Street	EC4N 7DZ	Residential	http://www.sunrise-care.co.uk/	36	320	2006
SUNRISE OPERATIONS EDGBASTON LIMITED	Inner London	London	8th Floor / 68 King William Street	EC4N 7DZ	Residential	http://www.sunrise-care.co.uk/	29	892	2006
SUNRISE OPERATIONS ELSTREE LIMITED	Aylesbury	Beaconsfield	Crofton House / 16 Warwick Road	HP9 2PE	Residential	http://www.sunrise-care.co.uk/	31	4158	2006
SUNRISE OPERATIONS ESHER LIMITED	Inner London	London	8th Floor / 68 King William Street	EC4N 7DZ	Residential	http://www.sunrise-care.co.uk/	36	1359	2006
SUNRISE OPERATIONS FLEET LIMITED	Inner London	London	8th Floor / 68 King William Street	EC4N 7DZ	Residential	http://www.sunrise-care.co.uk/	33	1416	2006

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SUNRISE OPERATIONS GUILDFORD LIMITED	Inner London	London	8th Floor / 68 King William Street	EC4N 7DZ	Residential	http://www.sunrise-care.co.uk/	32	1170	2006
SUNRISE OPERATIONS MOBBERLEY LIMITED	Aylesbury	Beaconsfield	Crofton House / 16 Warwick Road	HP9 2PE	Residential	http://www.sunrise-care.co.uk/	20	20	2006
SUNRISE OPERATIONS PURLEY LIMITED	Aylesbury	Beaconsfield	Crofton House / 16 Warwick Road	HP9 2PE	Residential	http://www.sunrise-care.co.uk/	46	2194	2006
SUNRISE OPERATIONS UK LIMITED	Aylesbury	Beaconsfield	Crofton House / 16 Warwick Road	HP9 2PE	Residential	http://www.sunrise-care.co.uk/	46	6057	2006
SUNRISE OPERATIONS V.W. LIMITED	Aylesbury	Beaconsfield	Crofton House / 16 Warwick Road	HP9 2PE	Residential	http://www.sunrise-care.co.uk/	33	4581	2006
SUNRISE OPERATIONS WESTBOURNE LIMITED	Inner London	London	8th Floor / 68 King William Street	EC4N 7DZ	Residential	http://www.sunrise-care.co.uk/	34	1407	2006
SUNRISE SENIOR LIVING LIMITED	Aylesbury	Beaconsfield	Crofton House / 16 Warwick Road	HP9 2PE	Residential	http://www.sunrise-care.co.uk/	38	6865	2005
T+ MEDICAL LIMITED	Inner London	London	c/o Druces & Attlee / Salisbury House London Wall	EC2M 5PS	Remote monitoring			883	2007
TALKING PRODUCTS LTD	Southampton	Southampton	210 Mauretania Road, Nursling Industrial Estate	SO16 0YS	Other support	http://www.talkingproducts.co.uk/			

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TANDBERG	Guildford	Staines	Unit 2, Pine Trees, Chertsey Lane	TW18 3HR	Audio/Visual	www.tandberg.com			
TANITA UK LTD	Greater London - North	Middlesex	The Barn, Philpots Close, West Drayton	UB7 7RY	Production/Supply	http://www.tanita.co.uk/professional.html			
TELECARE ALLIANCE LTD	Oxfordshire	Abingdon	80 Baker Road	OX14 5LJ	Consultancy	http://www.telecarealliance.co.uk/			
TELHEALTH DIAGNOSTICS LTD	Inner London	London	3 Marlborough Road	N19 4NA	Other support				
TERUMO UK	Guildford	Egham	Tamesis, The Causeway	TW20 9AW	Production/Supply	http://www.terumomedical.com/			
TESTWAY TELECARE	Southampton	Andover	Testway House, Greenwich Way	SP10 4BF	Central monitoring service; Residential	http://www.testway.co.uk/testway-support/telecare/			
THE TELEHEALTHCARE COMPANY	East Sussex	Battle	The Old Court House, North Trade Road	TN33 0EX	Remote monitoring	http://www.telehealthcareco.com/			
TOSHIBA	Guildford	Weybridge	Toshiba Court, Weybridge Business Park, Addlestone Road	KT15 2UL	Audio/Visual	http://www.toshiba-europe.com/			
TOUMAZ TECHNOLOGY LTD	Oxfordshire	Abingdon	Building 3, 115 Milton Park	OX14 4RZ	Remote monitoring	http://www.toumaz.com/			
TRITEQ LIMITED	Reading - Slough	Hungerford	3 The Courtyard / Stype	RG17 0RE	Other support	www.triteq.com			2006
TROCHUS PLC	Inner London	London	1 Deans Yard	SW1P 3NP	Remote monitoring	www.trochusplc.co.uk	7	349	2007
UK EHEALTH ASSOCIATION	Inner London	London	55 Gower Street	WC1E 6HQ	Other support			35	2006
VEGA GROUP PLC	St. Albans - Hemel Hempstead	Welwyn Garden City	2 Falcon Way / Shire Park / Welwyn Garden City	AL7 1TW	Central monitoring service	www.vega-group.co.uk	616	64120	2007

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VELSCIENT LTD	Guildford	Guildford	4 Riverview, Walnut Tree Close	GU1 4UX	Remote monitoring				
VIRTUAL COMMUNICATIONS NETWORK (UK) LIMITED	Inner London	London	16 Dover Street	W1S 4LR	Audio/Visual				2005
VISIONRADIO LIMITED	Portsmouth	Portsmouth	12 Fratton Road	PO1 5BX	Audio/Visual	www.visionradio.net			2006
VIVATEC LIMITED	Reading Slough	Wokingham	Crane House / Molly Millars Lane	RG41 2RZ	Safety/security	www.vivatec.co.uk			2006
WEALDEN AND EASTBOURNE LIFELINE (WELBEING)	Brighton	Eastbourne		BN21 3UH	Other support	www.welbeing.org.uk			
WELCH ALLYN	Buckinghamshire	Aston Abbotts	Cublington Road	HP22 4ND	Remote monitoring	http://www.welchallyn.com			

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TELECARE COMPANIES IN REST OF UK									
Company	Region	City	Address	Postcode	Area	Web Site	Employees Last Year	Revenue Last Year	Last Reporting Year
ACCORD HOUSING ASSOCIATION	West Midlands	West Bromwich	178 Birmingham Road	B70 6QG	Residential	http://www.accordha.org.uk/default.asp			
ADV COMMUNICATIONS LTD	North East	Kettering	Unit 3, Adam Business Centre, Henson Way, Telford Way Industrial Estate	NN16 8PX	Audio/visual	http://www.advcomms.co.uk/default.htm			
ADVANCED INDEPENDENT MONITORING	North West	Manchester	PO BOX 519	M60 2LY	Central monitoring service	http://www.aim-monitoring.co.uk/Alarm-Monitoring-from-aim.html			
AIDCALL	South West	Ashburton	Linhay House, Linhay Business Park	TQ13 7UP	Safety/security	http://www.aidcall.co.uk/personalcare/component?option=com_staticxt/Itemid,43/			
ALERTACALL	North West	Grange-Over-Sands	Haggs Lane, Cartmel	LA11 6HE	Central monitoring service	http://www.alertacall.com/			
AMS CONSULTING	West Midlands	Ross-on-Wye	Ashcote / Walford Road	HR9 5PQ	Consultancy	http://www.amsc.demon.co.uk/			
AXOIM MANUFACTURING SERVICES LTD	Wales	Newport	Technology Park, Newbridge	NP11 5AN	Production/Supply	http://www.axiom-ms.com/en/home.htm			
BIANCAMED	N Ireland	Belfast	ECIT Institute, Northern Ireland Science Park, Queen's Road	BT3 9DT	Remote monitoring	http://www.biancamed.com/home/index.php			
BIELD HOUSING ASSOCIATION	Scotland	Edinburgh	79 Hopetoun Road	EH7 4QF	Residential	http://www.bield.co.uk/			
BROOMWELL HEALTHWATCH	North West	Manchester	86 Princess Street	M1 6NG	Other support	http://www.broomwellhealthwatch.com/index.php			
BT HEALTH	West Midlands	Birmingham	Postpoint 3C1 / 5 Brindley Place	B1 2HL	Other support	http://www.btplc.com/Health/			
BUPA CARE HOMES	North West	Leeds	Goldsborough Estates, Bridge HseOutwoodLn	LS18 4UP	Residential	http://www.bupacarehomes.co.uk/asp/watbupaoffer/goldsborough.asp			

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CALL24HOUR	South West	Plymouth	Runnymede Court, 125 Leypark Walk	PL6 8UF	Central monitoring service	http://www.call24hour.com/			
CAMBRIDGE CONSULTANTS	East England	Cambridge	Science Park, Milton Road	CB4 0DW	Production/Supply	http://www.cambridgeconsultants.com/index.php			
CARDINAL HEALTH	West Midlands	Birmingham	Lifford Hall / Lifford Lane / Kings Norton	B30 3JN	Other support	http://www.cardinal.com/uk/index.asp			
CARECYMRU	Wales	Penarth	4 High Street	CF64 1EY	Other Support	http://www.carecymru.com/home.htm			
CELS	North East	Newcastle upon Tyne	Bioscience Ctre, Intl Centre for Life, Times Square	NE1 4EP	Other support	http://www.celsatlife.com/index.php?option=com_frontpage&Itemid=1			
CHOOSE INDEPENDENCE	East Midlands	Peterborough	Stuart House / East Wing / St Johns Street	PE1 5DD	Consultancy	http://www.chooseindependence.org/			
CHUBB COMMUNITY CARE	North West	Blackburn	Shadsworth Road	BB1 2PR	Safety/security	http://www.chubbcommunitycare.co.uk/			
CITYIS	Scotland	Livingston	3 Baird Road, Kirkton Campus,	EH54 7AZ	Audio/visual	http://www.cityis.com/index.php			
COMMUNITY VOICE LIMITED	North West	Bury	201/202 Warth Business Ctre, Warth Road	BL9 9NB	Central monitoring service	http://www.communityvoice.org.uk/index.htm			
CSR	East England	Cambridge	Churchill House, Cambridge Business Park, Cowley Road	CB4 0WE	Information technology	http://www.csr.com/home.php			
CYPRESS SEMICONDUCTORS	East England	Welwyn Garden City	Gate House, Fretherne Road	AL8 6NS	Production/Supply				
EASYLINK	East Midlands	Corby	3 Melbourne House, Corby Gate Business Park, Priors Haw Road	NN17 5JG	Production/supply	http://www.easylinkuk.co.uk/			
E-HEALTH CONSULTANTS	South West	Taunton	4Dunkelys Way	TA1 2LX	Other support				
ELDERCARE	North West	Rosendale	847 Burnley Road	BB4 8QL	Central monitoring service	http://www.eldercare.co.uk/			

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EMBER CORPORATION	East England	Cambridge	Cambridge Science Park, Unit 300, Milton Road	CB4 0XL	Information technology	http://www.ember.com/index.html			
E-VITA	Isle of Man	Douglas	PO Box 266	IM99 3PR	Production/Supply	http://www.projectevita.com/			
FREESCALE SEMICONDUCTOR	Scotland	East Kilbride	Kelvin Industrial Estate, Colvilles Road	G75 0TG	Production/supply	http://www.freescale.com/			
FREESCALE SEMICONDUCTOR	Scotland	Dunfermline	Linburn Road	KY11 8HT	Production/supply	http://www.freescale.com/			
FREQUENCY PRECISION	South West	Okehampton	Shorts Northlew /	EX20 3NR	Central monitoring service; Production/Supply				
GOLDSHIELD	North East	Tyne and Wear	Shield House, 5b Mylord Crescent, Killingworth	NE12 5UJ	Safety/security	http://www.goldshield-ltd.com/			
HALLIDAY JAMES	West Midlands	Willenhall	Ezekial House / Ezekial Lane	WV12 5QU	Production/Supply	http://www.hallidayjames.com/home.php			
HANOVER (SCOTLAND)	Scotland	Edinburgh	95 McDonald Road	EH7 4NS	Central monitoring service	http://www.hsha.org.uk/telecare/default.asp?ID=29			
HIDALGO	East England	Cambridge	Stable Block at The Grange, 20 Market Street	CB4 5QG	Audio/Visual	http://www.wideband.plus.com/Hidalgo/New_Web/public_html/toplevel.htm			
HOME TELEHEALTH LTD	South West	Chipping Sodbury	8 Wickham Close	BS37 6NH	Production/Supply	http://www.hometelehealthltd.co.uk/			
HOME TELEHEALTH LTD	Wales	Cardiff	Saint Line House, Mount Stuart Square	CF10 5LR	Production/Supply	http://www.hometelehealthltd.co.uk/default.htm			
INITIAL ATTENDO	North West	Blackburn	Shadsworth Road	BB1 2PR	Other support				
INTEL	South West	Swindon	Pipers Way	SN3 1RJ	Audio/visual	http://www.intel.com/index.htm#en_UK_15			
JJHT	North West	Poynton	Astra House, Spinners Lane	SK12 1GA	Residential	http://www.jjhousing.co.uk/			
JONTEK	North West	Stockport	Arden Business Centre / Horsfield Way / Bredbury	SK6 2SU	Audio/visual	http://www.jontek.com/			

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JUST CHECKING	West Midlands	Tanworth-in-Arden	Appledore Lodge / Blind Lane	B94 5HT	Central monitoring service	http://www.justchecking.co.uk/			
MCCARTHY & STONE	South West	Bournemouth	26-32 Oxford Street	BH8 8EZ	Residential	http://www.mccarthyandstone.co.uk/			
MEDICALARM	North East	Overstone	The Old Barn, Court Farm	NN6 0AP	Safety/security	https://sslrelay.com/medicalarm.co.uk/seconds/utn.jsessionid=1549be714eb5938/shopdata/index.shopscrip			
MIDLAND COMMUNICATIONS LTD	West Midlands	Upton-upon-Severn	Orchard Works	WR8 0JH	Audio/visual	http://www.midlandcomms.co.uk/index.html			
MOTION MEDIA TECHNOLOGY	South West	Bristol	Motion Media Technology Centre, Severn Bridge, Aust,	BS35 4BL	Audio/visual				
NESTOR SOCIAL CARE	East England	Hatfield	Colonnades, Beaconsfield Close	AL10 8YD	Other support	http://www.nestor-healthcare.co.uk/			
NORTH EAST LINC CARELINK	Yorkshire/Humber	Grimsby	The Resource Centre, Second Avenue	DN33 1NU	Central monitoring service	http://www.care-link.org.uk/			
NUVIDEO LTD	Scotland	Fife	Pitreavie Drive, Dunfermline	KY11 8GB	Audio/visual	http://www.nuvideo.net/index.htm			
OMRON HEALTHCARE	East Midlands	Milton Keynes	Opal Drive, Fox Milne	MK15 0DG	Remote monitoring	http://omronhealthcare.com/			
ORACLE UK	Scotland	Edinburgh	Oracle House, 5 Lochside Avenue, Edinburgh Park	EH12 9DJ	Information Technology	http://www.oracle.com/index.html			
ORBIT HOUSING	West Midlands	Binley	Garden Court, Harry Weston Road	CV3 2SU	Residential	http://www.orbit.org.uk/main.cfm?Type=IDX			
OUTHENTICS CONSULTING	South West	Chippenham	43 St Edith's Marsh Bromham	SN15 2DF	Consultancy	http://www.outhentics.net/			
PA CONSULTING	East England	Melbourn	Cambridge Technology Centre	SG8 6DP	Consultancy	http://www.paconsulting.com/home/			
PFIZER	East England	Cambridge	Granta Park, Great Abingdon	CB21 6GB	Pharma	http://www.pfizer.co.uk/Pages/Home.aspx			

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PLACES FOR PEOPLE	North West	Preston	4 The Pavillions	PR2 2YB	Other support	http://www.placesforpeople.co.uk/index.aspx			
PLEXTEK	East England	Cambridge	London Road, Great Chesterford	CB10 1NY	Information technology	http://www.plextek.co.uk/			
PRO VU COMMUNICATIONS	North West	Huddersfield	Savile Mill, Savile Street	HD3 4PG	Audio/visual	http://www.provu.co.uk/index.html			
RED EMBEDDED DESIGN	North West	Bradford	Velocity, Angel Way	BD7 1BX	Audio/visual	http://www.redembedded.com/main/index/			
SCOTTISH CENTRE FOR TELEHEALTH	Scotland	Aberdeen	Top Floor, Foresthill Lea, Foresthill	AB25 2ZY	Other support	http://www.sct.scot.nhs.uk/			
SENIORLINK ELDERCARE	North West	Rossendale	847 Burnley Road	BB4 8QL	Central monitoring service	http://www.seniorlinkeldercare.com/index.html			
SENSOR TECHNOLOGY AND DEVICES	N Ireland	Belfast	4 Heron Road	BT3 9LE	Remote monitoring	http://www.std-ltd.com/			
SMARTLIFE TECHNOLOGY LTD	North West	Manchester	Altrincham Strt (off Sackville Street)	L69 7ZB	Remote monitoring	http://www.smartlifetech.com/			
SOCIAL ALARM AND TELECARE ASSOCIATION	Yorkshire/Humber	Gainsborough	PO Box 217	DN21 1WT	Other support	http://www.sata-uk.org.uk/			
SRS TECHNOLOGY	West Midlands	Aldridge	105 Brickyard Rd	WS9 8SX	Remote monitoring	www.srstechology.co.uk			
TBS GB	East England	Southend-on-Sea	Central House,8 Clifftown Road	SS1 1AB	Production/Supply	http://www.tbsgb.com/			
TDS TELEMEDICINE	North West	Manchester	Ducie House, 37 Ducie Street	M1 2JW	Remote monitoring				
TELECARE SERVICES ASSOCIATION	North West	Chatham	10 Railway Street	ME4 4JL	Other support	http://www.telecare.org.uk/			
TELEHEALTH SOLUTIONS	East England	Watford	54 Clarendon Road	WD17 1DU	Information technology	http://www.telehealthsolutions.co.uk/			
TELEMEDCARE LTD	East Midlands	Lincoln	United House, Carlton Boulevard	LN2 4WJ	Remote monitoring	http://www.telemedcare.co.uk/index.html			
THE TECHNOLOGY PARTNERSHIP	East England	Melbourn	Melbourn Science Park	SG8 6EE	Production/Supply	http://www.ttp.com/			

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Company	Region	City	Address	Postcode	Area	Web Site	Employees Last Year	Revenue Last Year	Last Reporting Year
THE TELEHEALTH CONSULTANCY	Yorkshire/Humber	Doncaster	82 Fiddler's Drive, Armthorpe	DN3 3TS	Consultancy				
TUNSTALL GROUP LTD	Yorkshire/Humber	Whitley Bridge	Whitley Lodge, Whitley Bridge	DN14 0HR	Central monitoring service; Remote monitoring	http://www.tunstall.co.uk/home.aspx			
TYNETEC	North East	Blyth	Cowley Road, Blyth Riverside Business Park	NE24 5TF	Safety/security	http://www.tynetec.co.uk/			
VNC LIFELINE	North West	Liverpool	Millennium Resource Centre, Blenheim Street	L5 8UX	Central monitoring system	http://www.vnclifeline.co.uk/			
WALES AND WEST HOUSING ASSOCIATION	Wales	Cardiff	3 Alexandra Gate, Ffordd Pengam, Tremorfa	CF24 2UD	Residential	http://www.wzha.net			
WIRELESS HEALTHCARE LTD	East England	Royston	20 Leaden Hill, Orwell	SG8 5QH	Remote monitoring	http://www.wirelesshealthcare.co.uk/wh/index.htm			
WORCESTER TELECARE	South West	Malvern	PO Box 145	WR14 3ZP	Other support	http://www.worcstelecare.org/default.asp			
ZARLINK SEMICONDUCTOR	South West	Swindon	Cheney Manor	SN2 2QW	Remote monitoring	http://www.zarlink.com/zarlink/hs/index.htm			

3 Appendix 3: Government Initiatives in Self-Managed Care

Darzi Review

See: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_085825

- The vision the Darzi review sets out is of an NHS that gives patients and the public more information and choice, works in partnership and has quality of care at its heart. New measures will be introduced to create an NHS that helps people to stay healthy, as well as treating sickness. Achieving this goal requires the NHS to work in partnership with the many other agencies that also seek to promote health. The immediate steps identified by the Review are:
- Every primary care trust will commission comprehensive wellbeing and prevention services, in partnership with local authorities, with the services offered personalised to meet the specific needs of their local populations. Efforts must be focused on six key goals: tackling obesity, reducing alcohol harm, treating drug addiction, reducing smoking rates, improving sexual health and improving mental health.
- A Coalition for Better Health, with a set of new voluntary agreements between the Government, private and third sector organisations on actions to improve health outcomes. Focused initially on combating obesity, the Coalition will be based on agreements to ensure healthier food, to get more people more physically active, and to encourage companies to invest more in the health of their workforce.
- Raised awareness of the new national programme of vascular risk assessment, for people aged between 40 and 74, through a new 'Reduce Your Risk' campaign.
- Support for people to stay healthy at work through integrated Fit for Work services, to help people who want to return to work, but are struggling with ill health, to get back to appropriate work faster.
- Support GPs to help individuals and their families stay healthy by working with world-leading professionals and patient groups to improve the Quality and Outcomes Framework to provide better incentives for maintaining good health as well as good care.
- Giving patients more rights and control over their own health and care, providing more information and choice to make the system more responsive to their personal needs.
- Extending choice of GP practice. Patients will have greater choice of GP practice and better information to help them choose. A fairer funding system will be developed, ensuring better rewards for GPs who provide responsive, accessible and high quality services. The NHS Choices website will provide more information about all primary and community care services, so that people can make informed choices.
- Introducing a new right to choice in the first NHS Constitution. The draft NHS Constitution includes rights to choose both treatment and providers and to information on quality, so that, wherever it is relevant to them, patients are able to make informed choices.
- Ensuring everyone with a long-term condition has a personalised care plan. Care plans will be agreed by the patient and a named professional and provide a basis for the NHS and its partners to organise services around the needs of individuals.

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- Pilot personal health budgets. Learning from experience in social care and other health systems, personal health budgets will be piloted, giving individuals and families greater control over their own care, with clear safeguards.
- Guarantee patients access to the most clinically and cost effective drugs and treatments. All patients will receive drugs and treatments approved by the National Institute for Health and Clinical Excellence (NICE) where the clinician recommends them. NICE appraisals processes will be speeded up.
- Introducing new responsibilities, funds and prizes to support and reward innovation. Strategic health authorities will have a new legal duty to promote innovation. New funds and prizes will be available to the local NHS.
- Ensuring that clinically and cost effective innovation in medicines and medical technologies is adopted by: strengthening the horizon scanning process for new medicines in development, involving industry systematically to support better forward planning and develop ways to measure uptake; simplify the pathway by which new medical technologies pass from development into wider use, and develop ways to benchmark and monitor uptake.
- Creating new partnerships between the NHS, universities and industry. These 'clusters' will enable pioneering new treatments and models of care to be developed and then delivered directly to patients.
- Implementing wide ranging programme to support the development of vibrant, successful community health services.

Expert Patients Programme

See: http://www.dh.gov.uk/en/Aboutus/MinistersandDepartmentLeaders/ChiefMedicalOfficer/ProgressOnPolicy/ProgressBrowsableDocument/DH_4102757

Self-management is seen as an integral, even central, part of the system of care provided to people with chronic diseases. Expert Patients Programmes are not simply about educating patients about their condition or giving them relevant information. Programmes are based on developing the confidence and motivation of the patient to use their own skills, information, and professional services to take effective control over living with a chronic condition. The Expert Patients Programme is delivered locally by a network of trainers and around 1,400 volunteer tutors with long-term conditions. The programme focuses on five core self-management skills:

- problem solving
- decision making
- resource utilisation
- developing effective partnerships with healthcare providers
- and taking action

The programme offers a tool-kit of fundamental techniques that patients can undertake to improve their quality of life, living with a long-term condition. The course enables patients to develop their communication skills, manage their emotions, manage daily activities, interact with the healthcare system, find health resources, plan for the future, understand exercising and healthy eating, and manage fatigue, sleep, pain, anger and depression.

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NHS Direct On-Line

See: <http://www.nhsdirect.nhs.uk/zone.aspx?zonename=HomePage>

NHS Direct is not just a telephone health line but also offers commissioned services to other parts of the NHS to help them meet their patients' needs. These services include:

- out of hours support for GPs and dental services,
- telephone support for patients with long-term conditions,
- pre and post operative support for patients,
- 24 hour response to health scares, and
- remote clinics via telephone.

NHS Direct offers Long-term Conditions Services to supply responsive care to meet the needs of those with LTCs. This is achieved through partnership with healthcare providers such as Pfizer Health Solutions and Humana. The service encourages people to follow personalised health plans, to self care at home, and to learn how to manage their long term conditions to enjoy a happier and healthier lifestyle.

The OwnHealth long term care programme offers people with long term health conditions specialist telephone care from a dedicated care manager. OwnHealth is for people with diabetes, cardiovascular disease (conditions that affect the heart and circulatory system), heart failure, and COPD (chronic obstructive pulmonary disease). They receive regular telephone based coaching and advice from highly experienced care managers.

The OwnHealth service brings together:

- NHS Direct expertise in care management,
- Pfizer Health Solutions' experience of delivering disease management solutions,
- existing PCT services,
- skills of specially trained care managers, and
- proven clinical support software to ensure consistent advice.

NHS Direct also offers a Weather Watch service and has joined forces with the Met Office to provide a specialised weather forecasting system for people with respiratory problems.

NHS Choices

See: <http://www.dh.gov.uk/en/Healthcare/PatientChoice/index.htm> aspx
and <http://www.nhs.uk/nhsengland/choices/pages/Aboutpatientchoice>
and <http://www.nhs.uk/YourHealth/Pages/Livingwithyourcondition.aspx>

The NHS Constitution establishes a new right to choice and to information to support that choice: the new right makes choice a core feature of a responsive NHS in the 21st century. A dramatic expansion of patient choice in the NHS got under way in April 2008. The introduction of free choice means that patients referred to see a specialist can choose where they will be treated. There is also a government commitment to extend to all fifteen million patients with a chronic or long term condition access to a choice of 'active patient' or 'care at home' options - clinically appropriate to them and supported by the NHS.'

The NHS Choices website has an online guide to help individuals with LTCs take care of their own health, and have the information, confidence and support to make the right decisions about their health. It has details of entitlements and explains the choice of support that should be available. It directs the person to services, either from the NHS or social services, and other sources of information that can help.

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The guide is split into five main categories:

- Information
- Healthy lifestyle
- Skills and confidence
- Talking to others about the conditions suffered
- Getting the right equipment

The guide also has descriptions of individual care-plans, self-care and patient stories.

Personal Budgets

See: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_093842

Recent initiatives in the Department of Health (DH) are assessing the benefits to service users and providers of Individual Budgets (IBs) and Personal Health Budgets (PHBs).

Across the 13 pilot projects, IBs were piloted with older people, working age adults with physical, sensory and/or learning disabilities, people with mental health problems and young people in transition to adult services. IB resources were typically used to pay for personal care, domestic help and social, leisure and educational activities. People receiving an IB were significantly more likely to report feeling in control of their daily lives, welcoming the support obtained and how it was delivered, compared to those receiving conventional social care services.

The DH paper 'High Quality Care for All' announced that DH would build on the successes of direct payments and individual budgets in social care by launching a pilot programme in 2009 to explore the potential of personal health budgets. Personal health budgets could improve both the quality of patient experience and the effectiveness of care by giving people greater choice and control over the services they receive. A personal health budget could work in many ways, including by having a notional budget held by the commissioner or a budget managed on the patient's behalf by a third party. PCTs already have extensive powers to offer these. There is set of principles that should be respected in any use of personal health budgets:

- upholding NHS values;
- safeguarding and improving quality – safety, effectiveness and experience;
- tackling inequalities and protecting equality;
- ensuring that personal health budgets are purely voluntary;
- making decisions as close as possible to the patient; and
- working in partnership.

myHealthSpace

See: <http://myhealthspace.co.uk/>

myHealthSpace is a privately funded social networking utility that connects people within the traditional, alternative and complementary health space. It allows practitioners, suppliers, professional bodies, clinics, therapists, customers and the general public to interact with one another, share information, discuss experiences and create networks with people. It provides a business directory, forums, reviews, personal profiles, blogs and articles.

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Change4Life

See: <http://www.nhs.uk/Change4Life/Pages/default.aspx?gclid=CJ7--vzv9ZkCFQSPFQodNEdjRg&gclid=CJ7--vzv9ZkCFQSPFQodNEdjRg>

Due to less active lifestyles and the prevalence of convenience foods, 9 out of 10 children today could grow up with dangerous amounts of fat in their bodies. This can cause life-threatening diseases such as cancer, type 2 diabetes and heart disease. Change4Life is a DH initiative to encourage parents and children to eat well and exercise more. The website offers information, games, tools, tips, free welcome pack and a search facility for local community events.

Care service commissioning

See: <http://www.dh.gov.uk/en/SocialCare/Commissioning/index.htm>

Commissioning is the process used by local authorities and NHS bodies to arrange services for their local population. It is the process of translating local aspirations and assessed needs, by specifying and procuring services for the local population, into services for people that use them. The Government expects councils to use fair commissioning practice, and has made additional resources available. Individuals should be at the centre of a commissioning process that offers them the full range of options for meeting their care needs, from which they can make a real and informed choice.

NHS continuing care and nursing care services may be provided in social care settings and alongside social care services. However, these services are commissioned by NHS bodies. In order to ensure that services are provided seamlessly to service users, local authorities and NHS bodies are expected to work together to commission local services.

The Commissioning Framework for Health and Well-being is designed to help local authority, PCT and practice based commissioners to work together more effectively. This will enable them to provide services that are tailored to the needs of individuals and local communities, and to help people maintain their health, well-being and independence wherever possible.

Putting people first

See: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_081118

Putting people first seeks to set out and support the Government's commitment to independent living for all adults. It also outlines the shared aims and values, which will guide the transformation of adult social care. It is unique in establishing a collaborative approach between central and local Government, the sector's professional leadership, providers and the regulator. It seeks to be the first public service reform programme which is co-produced, co-developed, co-evaluated and recognises that real change will only be achieved through the participation of users and carers at every stage. It recognises that sustainable and meaningful change depends significantly on our capacity to empower people who use services and to win the hearts and minds of all stakeholders', especially front line staff. Local government will need to spend some existing resources differently and the Government will provide specific funding to support system-wide transformation through the Social Care Reform Grant, in line with agreements on new burdens.

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Working for a healthier tomorrow

See:<http://www.workingforhealth.gov.uk/documents/working-for-a-healthier-tomorrow-tagged.pdf>

Dame Carol Black's review sets out a vision of a new approach to health and work in Britain which can only be achieved with the active commitment of all those with an interest in the health of the working age population. Individuals have a fundamental personal responsibility for maintaining their own health. In addition to their existing legal duties, employers must work with their employees to change the nature of the modern workplace in Britain and ensure the health and productivity of their workforce. Trades unions must seize the opportunity to champion health and well-being in the workplace. Healthcare professionals must adapt the advice they give to patients to reflect the importance of remaining in or returning to work wherever possible. Government must lay the foundations for long-term change through the piloting of a new approach to early intervention and a renewed commitment to make the public sector an exemplar.

A National Dementia Strategy

See:http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_094058

"Living Well with Dementia" sets out the government's strategy for dementia for the next five years. It is integral to the "Putting People First" agenda and the implementation of the NHS Review "Your NHS, Your Future" and sits alongside other key government policies including the Carers' Strategy, Valuing People Now, the review of "No Secrets", Transforming Adult Social Care and World Class Commissioning.

Implementing the national dementia strategy will require leadership at all levels, across all agencies and in all sectors. People with dementia use mainstream services in acute, primary and community care. They live in neighbourhoods and communities. As their needs become more complex they use specialist mental health and social care services and at the end of life they may need palliative care. There is a particular need for leadership in acute care and in residential care homes, to ensure pathways and care plans are in place and implemented.

4 Appendix 4: Public and private funding for new product and service development

Funding for telecare research, innovation and technology production is available from several public and private funding sources. Examples of public funding include:

TSB Innovation Platforms

Assisted Living Innovation Platform: the aim of ALIP is to make significant advances in the technology needed to enable people who suffer from chronic long term conditions to live independently. Given the predicted increase in the numbers of people living with such conditions, current care models are unsustainable, and major changes will be needed. The platform will also be able to consider the requirements of well being, and address the societal challenges raised by health conditions that require a preventative approach. A wide range of activity has been proposed, including fairly conventional short term and long term Research and Development but, because an Innovation Platform can take on a wide brief, other work streams are also proposed in: standards, user centred design, knowledge transfer, business modelling, and working towards a future technology demonstrator "suite".

Network Security Innovation Platform: the NSIP is concerned with the confidentiality, integrity and availability of a network communications infrastructure, the information being transmitted across that network and the systems that use it to communicate. This will inevitably include the people using the network, and it is therefore relevant to include the usability of such systems. It is obviously applicable to the area of telecare provision. Information Security is a major growth area, and one where the UK is well placed to become a global leader. The Network Security Innovation Platform (NSIP) was created to respond to and address this challenge.

Detection and Identification of Infectious Agents: the research and development to be funded by the new programme will be aimed at producing new rapid diagnostic tests and Point of Care (POC) devices for the detection and identification of infectious agents in both humans and animals. The requirement for early detection of infection in care service users was one of the findings of the TKN/TSA survey into 2nd generation telecare technology.

National Institute for Health Research Invention for Innovation (i4i) Programme

Launched in July 2008, i4i has introduced new funding opportunities such as the i4i Future Product Development (FPD) funding streams to provide investment in, and improved identification of, promising healthcare technologies (including telecare technologies) in order to accelerate the development of new healthcare products for the 21st century. i4i funds translational research, extending between basic research and pre-clinical trials or health technology assessments. This part of the innovation process is an area of high technological and business risk, and the projects funded by i4i reflect this. Closer links are being established between the existing product funding streams and a range of 'ideas generators' - including the Research Councils, Biomedical Research Centres, the NHS National Innovation Centre, the Technology Strategy Board (TSB), healthcare companies, the National Endowment for Science, Technology and the Arts (NESTA) - and with organisations who can take products to market including individual companies, UK Trade and Investment (UKTI) and venture capital groups.

Other sources of funding are detailed in the table below.

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Grant Funding Available for Telecare

Source of Grant and Web Address	Status of Funder	Name of Grant	Amount (£)	Timescale	Specific Technology Area	Small Print (Equity Required, Match Funding etc)
Technology Strategy Board (TSB) www.innovateuk.org	Executive, non-dept. public body	Assisted Living Innovation Platform (ALIP)	Total 13 million initially	Ongoing – calls c. every 6 months	Assisted living (Telecare Telehealth and related sectors)	Consortia favoured, match funding necessary (50%)
SEEDA Research and Development Grants (R & D) www.seeda.co.uk	Regional Development Agency (RDA)	Micro (development of low cost prototype)	5 – 20k	Ongoing	Not specific – preferably high value technologies	Less than 10 employees, 50% eligible costs
		Research (feasibility studies)	0 – 75k	Ongoing	As above	Less than 50 employees, 60% eligible costs
		Development (pre-production prototype)	20 – 200k	Ongoing	As above	Less than 250 employees, 35% eligible costs
		Exceptional (strategically important pre-production prototype)	Up to 500k	Ongoing	As above	Less than 250 employees, 35% eligible costs Software development excluded
SEEDA Grant for Business Investment (GBI) – formerly SFIE	Regional Development Agency (RDA)	Grant for Business Investment (towards capital costs of business creation/development)	No maximum	Ongoing	Not specific	Only businesses in eligible area can apply – poorer areas of SEEDA region. Grant between 10 and 35% costs depending on geographical area and company size

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Source of Grant and Web Address	Status of Funder	Name of Grant	Amount (£)	Timescale	Specific Technology Area	Small Print (Equity Required, Match Funding etc)
Department of Health (DoH) – National Institute for Health Research i4i programme www.nihr-ccf.org.uk	National government Department	Future Product Development (FPD) – feasibility, applied research, commercial viability, collaborative applied research	100 – 300k	Ongoing	Not specific but should meet needs and policy of NHS	0 – 50% contribution required depending on specific programme
		Pilot Healthcare Technology Cooperatives (HTCs) – NHS-led consortia with common purpose	Not specified	Ongoing	As above	Not specified
		Challenge Fund for Innovation (CFI) – co-investment with other organisations eg TSB	Not specified	Ongoing	As above	Not specified
		Small Business Research Initiative (SBRI) – meeting specific needs of NHS eg hospital acquired infections	Call-specific	Ongoing	Very specific	Dependent upon call

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Source of Grant and Web Address	Status of Funder	Name of Grant	Amount (£)	Timescale	Specific Technology Area	Small Print (Equity Required, Match Funding etc)
European Union www.cordis.europa.eu/fp7/ICT or /health	Multinational funder	ICT work programme and Health work programme	ICT call – c. 750 million	Call open for 2009 - 2010 (1 April deadline) Awaiting next call	Research areas specified for calls	Large multinational consortia required. SMEs welcome and can get up to 75% funding. Lots of admin and payment well in arrears.
Ambient Assisted Living - Independent of EU but funded principally by them www.aal-europe.eu		Ambient Assisted Living	Health - awaiting next call	Deadline for next call May 2009	Research to enhance the quality of life of older people and strengthen the industrial base through ICT	Usual EU terms
EU/SEEDA/SEHTA (katy.lethbridge@sehta.co.uk)		FASILIS	€600 million -- 15 x €6000 in vouchers	June 09 onwards	Telecare favoured	SMEs can apply for 6000 Euro voucher to be spent in partner university

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Source of Grant and Web Address	Status of Funder	Name of Grant	Amount (£)	Timescale	Specific Technology Area	Small Print (Equity Required, Match Funding etc)
Wellcome Trust www.wellcome.ac.uk	Charity	Programme Grant (funds basic research)	Each grant cannot exceed 1.2 million	Ongoing	Meets requirements of Wellcome Trust	Applicants need to be full-time academics or researchers
		Translation awards (bridges funding gap in commercialisation of new technologies)	Up to 30 million pa	Ongoing		Wellcome Trust take share in company or royalties/licence deal
For other Charity funding see the Association of Medical Research Charities (www.amrc.org.uk). There are several charities focussing on chronic diseases, but none specify they fund telecare.						
Medical Research Council www.mrc.ac.uk Fund mainly science-based 'blue sky research' so unlikely to fund applied Telecare. However, have a priority on 'Ageing related research' and also have a 'Translation Research Fund'.	UK research council - public sector					

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Source of Grant and Web Address	Status of Funder	Name of Grant	Amount (£)	Timescale	Specific Technology Area	Small Print (Equity Required, Match Funding etc)
Engineering and Physical Sciences Research Council (EPSRC) www.epsrc.ac.uk	UK research council – public sector	Range of grants may be relevant. Have a 'connecting with business stream' EQUAL (Extend Quality of Life)	Share of £2.8 billion for all research councils £30k – £300k	Ongoing - but specific calls may be made Specific calls	Healthcare, digital economy, mechanical and medical engineering. Inclusive environment, inclusive design, rehabilitation	University-focussed. Much more blue-skies research than applied. Emphasis on cross-discipline collaboration
Economic and Social Research Council (ESRC) www.esrcsocietytoday.ac.uk	UK research council - public sector	Several may be relevant Including' Lifecourse, lifestyles and health' programme	Share of £2.8 billion for all research councils	Ongoing - but specific calls may be made	Social science research – lifecourse, lifestyles and health	University – focussed social science studies
National Endowment for Science Technology and the Arts (NESTA) www.nesta.org.uk	Independent	NESTA Ventures	£250k as first round	Ongoing	Life sciences and healthcare	Investment in early stage companies –equity/royalties required
Various County, District and Borough councils	Public sector	Usually support for deployment of equipment and/or services. Often 'pilot' studies	Various	ongoing	Usually application of existing technology/service to select group	May not cover full costs of service. Often transient funding

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Source of Grant and Web Address	Status of Funder	Name of Grant	Amount (£)	Timescale	Specific Technology Area	Small Print (Equity Required, Match Funding etc)
<p>Recent Government Policy driving Telecare agenda which could result in extra resources</p> <p>Integrated Care Programme (inform and influence health and social care professionals) www.soverign-publications.com</p> <p>A National Dementia Strategy (living well with dementia) www.dh.gov.uk</p> <p>Fit for Work Service (to help support people to stay in or return to work more quickly when they develop a health condition) www.workingforhealth.gov.uk</p>						