

TELECARE IN SCOTLAND:

BENCHMARKING THE PRESENT, EMBRACING THE FUTURE



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EXECUTIVE SUMMARY

Telecare is the remote or enhanced delivery of services to people in their own home by means of telecommunications and computerised systems. It offers the prospect of preventative care services that maintain vulnerable people in the community with increased independence and at lower overall service cost, although these outcomes are dependent on sensitive design of service provision for specific users.

Alarm based services have been a mainstream form of care service provision in Scotland for many years, and in 2006 over 137,000 people benefited from a community alarm service. Since 2006, the Scottish Government has promoted telecare service provision through a Telecare Development Programme (TDP) fund of £8.35m. Using this funding, local care partnerships have begun to develop, extend, and mainstream telecare solutions to care needs according to local needs profiles and priorities. By September 2007, TDP funding was responsible for a minimum of:

- Around 1,300 additional people able to maintain themselves at home with support
- 66 delayed hospital discharges and 140 emergency hospital admissions avoided, with 1,800 hospital bed days saved
- 74 care home admissions avoided, and 6,900 care home bed days saved
- 1,250 nights of sleepover care and 107,000 home check visits saved

In terms of efficiencies, based on information from 13 partnerships (out of 32) for the first six months of 2007/8, the York Health Economics Consortium has provisionally estimated verifiable savings of approximately £2.9m.

Many other countries are also forging ahead with the implementation of telecare solutions, and telecare is now widely accepted as an inevitable development in care service provision. Measured against developments in a wide range of countries, Scottish progress to date has been good, and Scotland can consider itself to be in the vanguard of countries progressing to mainstream telecare service provision. As such it will be one of the first to secure widespread benefits from telecare service provision for its people.

For a variety of reasons it is difficult to fully quantify the benefits that arise from telecare. However, a positive evidence base is beginning to develop with respect to a range of telecare services targeted at the elderly, and care management for those with chronic long-term medical conditions, and this evidence base will continue to develop rapidly over the next few years, both in an international context, and with specific respect to Scotland. However, it may well be that the front line organisations involved in telecare investment may not be the same ones that actually enjoy direct cost savings as a result. For example, social care investments may well generate health care savings as a consequence, or vice versa. If this proves to be the case, encouraging organisational collaboration to accelerate telecare provision will prove one of the key future challenges to overcome

The Scottish Government is currently working on how to promote further and faster integration of telecare into mainstream care service provision, including the adoption of “third generation” broadband-based interactive care services.

INTRODUCTION

Telecare is the remote or enhanced delivery of services to people in their own home by means of telecommunications and computerised systems. The term can cover both care and health services, although the latter are often referred to by the term 'telehealth'. There is no standard categorisation of telecare, but for the purpose of the programme in Scotland the following categories have been adopted:

- First generation telecare refers to equipment and devices found in most community alarm schemes. It refers to user-activated – e.g. push button, pendant or pull cord – alarm calls to a control centre where a call handler can organise a response of some kind - usually via a neighbour, relative or friend acting as a 'key holder'
- Second generation telecare evolved from the introduction into basic community alarm services of sensors such as smoke alarms and flood detectors. Second generation telecare includes sensors that can monitor the home environment, vital signs, physiological measures, and lifestyle. These sensors can collect and transmit information continuously about door opening, bathwater running, the use of electrical appliances, and movement both within and outwith the home. This provides a much more sophisticated and comprehensive support to managing risk and improved quality of life
- Third generation telecare arose from improving and increasing availability of broadband, wireless and audio-visual technology. This offers potential for virtual or tele-consultations between the service user and doctor, nurse or support worker, thus reducing the need for home visits or hospital appointments. Furthermore, it leads to increasing opportunities for people - particularly those unable to leave their homes alone - to 'visit' libraries, shops and maintain contact with family and friends

First generation telecare has been a mainstream form of care service provision in Scotland for many years. Around 1999-2000, a number of innovative Scottish local care partnerships took the first steps towards developing telecare service provision further. Subsequently, since 2006, promotion of wider and faster adoption of telecare service provision has been the purpose of Scottish Government funding known as the Telecare Development Programme.

Ensuring Scottish care providers now go on to adopt second generation telecare as a mainstream approach to service provision, and implement third generation services as swiftly as possible, will be at the heart of telecare strategy for Scotland over the coming decade. The details of this strategy, in particular how it will be taken forward over the next two years, are currently being developed. However, a number of key issues already form the basis of a strategic workplan being progressed by a national Telecare Development Board established by the Scottish Government. At the same time, we already know the main delivery vehicles for the strategy –the 32 local care partnerships operating across Scotland. Over the next few months we will be working with these partnerships to absorb the lessons of Telecare Development Programme funding to date, to ensure that in future resources can be made to work even harder to deliver telecare services.

THE BENEFITS OF TELECARE

First generation telecare services have already transformed care service provision in Scotland by increasing the ability of vulnerable people to remain in their homes. Alarm services give them the comfort and security of knowing that care support will be available when required. In 2006 over 137,000 people in Scotland benefited from a community alarm service.

Second, and third generation telecare promise even greater service improvements¹:

- Averting the need for costly crisis health interventions through prevention and early prediction/detection of emergent problems (an example of this is the Falkirk falls management project)
- Preserving the independence of vulnerable people in their own homes to a much more significant extent (an example of this is the West Lothian care service)
- Reducing the cost of care through avoiding institutional care solutions

The Falkirk falls management project

The award winning Falkirk falls management project was set up as a collaborative initiative between care workers and primary and secondary health workers in 2002. Automatic falls detectors are now part of mainstream service provision for older people, people with dementia, and those at risk of seizure. Mobile emergency care staff monitor for and respond to service user falls. If a service user experiences more than one fall they are offered assistance through Falls Management Clinics, which are operated by a multi disciplinary team providing assessment, equipment, advice and therapy services. Since the service was established mobile emergency care staff have attended over 8,000 falls, and almost 300 people have been offered a referral to the Clinics. The initiative has GP support and involvement, with information (with the permission of service users) fully shared between service providers to streamline service delivery.

Table 1: Telecare Benefit Matrix²

Service Users	Informal Carers	Social Services	Housing Providers	Health Economy
Increased choice in location and type of care	Peace of mind	Greater sense of satisfaction for professional staff	Reduced voids in sheltered housing	Reduced level of unscheduled care
More responsive services	Improved Quality of Life	More effective use of staff time	Increased demand for specialist homes	Reduced emergency admissions
Improved Quality of Life	Respite opportunities	Reduced Admissions to residential care	Reduced damage to properties	Reduced number of hospital re-admissions
Increased Independence	Reduced stress	Reduced Delayed Transfers of Care	Reduced demand for other services	Reduced Delayed Transfers of Care
Increased chance of "staying put"	Increased independence	Reduced demand for other services e.g. homecare	New role for mobile wardens	Improved medication compliance
Reduced care costs	Improved assessments	Increased system capacity	Improved home security	Reduced ambulance needs

¹ Bayer, S., Barlow, J., Curry, R. (2005) Assessing the impact of a care innovation: Telecare, Tanaka Business School Discussion Papers: TBS/DP05/38, London, Tanaka Business School

² Doughty, K (2007a) Telecare – Practice and Potential, Community and Home Care, forthcoming. Note, against this telecare may also involve potential disbenefits, such as increased isolation.

The Audit Commission sees telecare as offering “the tantalising possibility for public policy to meet more people’s desire to remain independent for longer, while at the same time saving money overall”³. The full range of potential benefits are summarised in table 1.

The West Lothian Care Service

In West Lothian, a second generation telecare approach initially piloted in 1999 is now a mainstreamed service that is pivotal to the whole framework of care and support for older people across the entire local authority area.

The service consists of the following wireless devices that can be installed in under 30 minutes:

- A home alert console, which links sensors to a call centre
- Passive Infrared detectors to monitor movement activity
- Flood detectors
- A heat extreme sensor sensitive to both high and low temperatures
- A smoke detector

Additional technological devices are provided where assessed as required, and can include further passive alarms, such door opening alerts and fall detectors, or active devices such as remote video door entry systems and pendant alarms.

The service now covers over 2,700 users out of a potential total of roughly 10,000 households – 13% of whom have more than a core package⁴

An independent evaluation of the West Lothian service⁵ concluded:

- The overwhelming user response to the technology has been positive, with users reporting an increased sense of personal safety and security
- Informal carers report increased peace of mind
- Weekly costs of telecare based care service provision were around £145-£185 less per week than a West Lothian care home alternative

West Lothian now provides the largest scale and most developed telecare service in Europe

PROGRESS UNDER THE TELECARE DEVELOPMENT FUNDING PROGRAMME

In 2006, the Scottish Government made £8.35m funding available over the period 2006-8 to local care partnerships. These partnerships have been able, within a clear framework of permissible use of funds, to further develop telecare services in accordance with local priorities and opportunities.

Annex 1 summarises what each partnership is now doing at local level to develop its telecare services using this funding. It demonstrates how dynamic the picture is in Scotland at present, with local partnerships collectively acting to improve service provision to a wide range of service users through an even wider range of telecare applications.

³ Audit Commission (2004) Assistive technology Independence and well being 4, London, Audit Commission

⁴ Kelly D (2007) Care with Chips: How technology is supporting delivery of care in West Lothian

⁵ Bowes, A., and McColgan, G (2006) Smart technology and community care for older people: innovation in West Lothian, Scotland, Edinburgh, Age Concern Scotland

Telecare in Scotland: Benchmarking the Present, Embracing the Future

For the most part, largely reflecting the initial programme focus, partnerships are developing services for older persons and within that group are concentrating on care rather than health applications. However, this is not exclusively the case, and Annex 1 includes details of a number of care partnerships extending telecare services to people with learning disabilities and (particularly in a number of rural contexts) developing telehealth services.

In broad terms, the Telecare Development Programme in Scotland was intended to ensure that telecare becomes an integral part of community care service provision. Perhaps the most encouraging aspect of the progress summarised in Annex 1 therefore is that a number of local partnerships, from what was virtually a standing start in 2006, have begun to develop area wide strategies for future telecare service provision. This is a very positive development, which holds out the prospect that the extent of telecare service provision currently being achieved in West Lothian may increasingly be the norm soon in other Scottish local authority areas.

More specifically, from a national perspective the core impact of the Telecare Development Programme is being captured in terms of the national contribution it makes to four community care outcomes⁶.

National Outcomes	Anticipated TDP contribution 2006/7 – 2007/8
Reduce the number of delayed discharges from hospital	400
Reduce the number of unplanned hospital admissions for community care based clients	1,700
Remove the need for care home admissions for community care based clients	390
Increase the number of persons able to maintain themselves at home through receipt of a telecare service (with support)	3,800

In addition, a number of core efficiency savings will arise from the programme.

Core efficiency savings from the Telecare Development Programme 2007/8 – 2009/10
Over the period 2007-2010, these are a minimum of: <ul style="list-style-type: none">• 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.

⁶ These are separate from and in addition to a range of other locally sought and expected outcomes

Telecare in Scotland: Benchmarking the Present, Embracing the Future

The York Health Economics Consortium at York University (YHEC) is monitoring progress against these expected outcomes and efficiencies⁷. Results so far indicate a not untypical profile of accelerating progress from a standing start, with many local initiatives still in their early or formative stages. By September 2007, some 24 out of the 32 local care partnerships reported they had begun implementing telecare services using TDP funding. Around 27% of TDP funds allocated to these partnerships had been spent by this date.

Only a comparatively small number of local partnerships are at this stage able to quantify the outcomes and efficiencies being achieved, but reported results are encouraging. At least 6 partnerships have achieved at least 50% of their original targets with respect to reducing delayed discharges, and at least 7 have achieved their targets with respect to increasing the numbers of people able to live independently. Moreover:

- Information from 7 partnerships shows 66 delayed hospital discharges and 140 emergency hospital admissions have been avoided
- Information from 9 partnerships shows 74 care home admissions have been avoided
- Based on information from 14 partnerships, nearly 1,300 additional people have been able to maintain themselves at home with support

In terms of efficiencies, based on information from 13 partnerships for the first six months of 2007/8, YHEC have provisionally estimated verifiable savings of approximately £2.9m (compared to a projected figure of around £14.4m for 2007/8 as a whole, across all 32 partnerships). This is based on over:

- 1,800 hospital bed days saved and 6,900 care home bed days saved⁸
- 1,250 nights of sleepover care saved⁹
- 107,000 home check visits saved¹⁰

BENCHMARKING SCOTTISH TELECARE PROGRESS

Many countries are now forging ahead with the implementation of telecare solutions to care needs. Telecare is now accepted by many as an inevitable development for countries to embrace, a matter of when, rather than if: "The momentum is surging ahead, pushing all components of our society, including users, disability organisations, regulatory authorities, legislators, standardisation bodies, civil servants, governments and industry towards having to grapple with new issues and break new ground. There is no turning back now"¹¹.

Benchmarking Scottish telecare progress against that being made in other countries is difficult because of the lack of a standard international set of definitions. However, it is possible, with care, to make some useful comparisons.

⁷ York Health Economics Consortium (2008) Report on Quarterly Return 2 (July – September 2007), January, mimeo

⁸ Based on information provided by 6 partnerships

⁹ Based on information provided by 2 partnerships

¹⁰ Based on information provided by 4 partnerships

¹¹ Roe, P (Ed) (2007) Towards an inclusive future: Impact and wider potential of information and communication technologies, Brussels, COST

England

Estimates published in 2005 by the Department of Health indicated that of 500,000 older people living in care homes, up to 35% could be supported to live at home or in extra care housing schemes through the use of telecare. Central government in England has now adopted an unambiguous policy commitment to telecare, with an explicit overall aim to ensure a telecare service is installed in all homes that need it by 2010¹².

A key aspect of this has been £80m of grant funding, known as Preventative Technology Grant (PTG). PTG was made available to local social care authorities in England from April 2006, with the expectation that it would increase the numbers of older people benefiting from telecare by at least 160,000 over a two-year period, in part by extending and enhancing the existing community alarm service infrastructure, which was then serving approximately 1.4 million people. PTG was also seen as complementary to a separate initiative ('Connecting for Health'), to establish a national broadband network, and a national NHS Care Records Service to support the development and implementation of telemedicine and telecare applications.

Increasing numbers of local care authorities (for example, Kent County Council) have built upon PTG, and proactive support from the Department of Health (organised through its 'change agent team' the Care Services Improvement Partnership¹³) to develop overarching telecare strategies for their areas¹⁴.

Commission for Social Care Inspection evidence shows there were nearly 150,000 new telecare users in England in 2006/7 alone, and a further 161,000 in 2007/8¹⁵. Underlying this was a total expenditure on telecare infrastructure, equipment and services over the two financial years 2006/6-2007/8 of some £132 million.

The most recent initiative in England to accelerate the development of telecare service provision was the announcement, in May 2007, of a £12 million fund to be shared across three 'whole system demonstrator' sites in Kent, Newham and Cornwall. This represents the biggest single telecare/ telehealth convergence pilot in the UK, covering a population of over a million people.

¹² Department of Health (2005) Building Telecare in England, London, Department of Health; Department of Health (2006) Our health, our care, our say: a new direction for community services, Cm 6737, London, The Stationery Office

¹³ Care Services Improvement Partnership (2005) Telecare Implementation Guide, London, Department of Health

¹⁴ See also Durham County Council (2005) Telecare Strategy for County Durham 2006-2008; Sefton MBC (2006) Telecare Strategy for Sefton MBC 2006-2009.

¹⁵ Clark, M (2007) Care Services Improvement Partnership and telecare: Performance progress – Sept 2007

Telecare in Kent

Kent County Council was an early innovator in exploiting the potential of telecare service provision. The Council developed three telecare pilots in 2004, with the more general intention from the outset of adopting telecare as a mainstream service approach across the whole of the Social Services Directorate in due course. Twelve devices were used in the pilots – with variations across individual users. The devices were: Passive Infrared movement sensors, bogus caller buttons, pull cords, smoke detectors, flood detectors, temperature extremes detectors, gas detectors, carbon monoxide detectors, falls detectors, bed sensors, chair sensors, and property exit sensors.

By the end of February 2006, 320 people were receiving a telecare-based service through the pilots, and an independent evaluation found that both users and carers felt telecare had significantly helped users to live independently within the community: “Insofar as users had changed their intentions about future living choices because of the installation of telecare, this was towards living more independently, and not moving into supported living environments. While users and carers recognised that telecare provided an important resource in emergencies they felt that its main effect was psychological, providing both users and carers with reassurance that if anything did go wrong they could summon help. Therefore they felt that it helped them to build their own confidence in independent living”¹⁶.

Wales

In Wales, just under £9 million of Telecare Capital Grant (TCG) has been made available over the period 2006-9 (with a policy target of providing 10,000 homes with telecare equipment), together with an additional £40,000 of revenue grant for all authorities to support the development of telecare strategies. All 22 Welsh local authorities have now produced telecare strategies, which in many cases are very ambitious¹⁷.

Based on monitoring reports it is expected that by the end of the grant period some 45,000 people, or 1.5% of the total population of Wales will be using a telecare service other than a community alarm¹⁸.

Further funding has now been announced for a ‘Telehealth @ Home’ initiative, under which a share of a £1 million fund will be provided to support a number of authorities to develop telehealth demonstrator projects.

Other Countries

Looking further afield, a varied picture emerges¹⁹

In the **USA**, the use of ICT in a remote care context has been limited, and largely restricted to specific telehealth applications²⁰. At present, there are no plans to take telecare/

¹⁶ Alaszewski, A., and Cappello, R (2006) Piloting Telecare in Kent County Council: The Key Lessons Final Report, Canterbury, Centre for Health Services Studies University of Kent

¹⁷ For example, the Carmarthenshire strategy contains a commitment to “expanding telecare services to ensure that all people over 75 can access assistive technology by March 2010”

¹⁸ Davis, L (2007) Telecare in Wales: Ironing the Welsh Hills, Telecare 2007: Caring from a distance, Lakeside Conference Centre, Birmingham UK

¹⁹ In this section we have not tried to provide a comprehensive review. However, the countries discussed provide a reasonable cross section of telecare progress across the developed nations.

telehealth into the mainstream of care provision, but this is reflective of the more general fact that “In the US, there are no or very few policies that are focused on assisting elderly people to age in place safely”²¹.

The **Netherlands**, which currently has a population of roughly 2.4 million people aged 65 or over, has been exploring ‘smart home’ technology since the early 1990s²². The Smart Homes Association (SMA), a non-profit making organisation, has been active in promoting the idea, and developing ‘demonstrator’ models to stimulate interest. Five initial demonstrators were opened in 1997. However, smart homes are yet to become part of mainstream service provision.

Most recently, SMA has been participating in two new European Union funded multi country smart homes projects, ‘Netcarity’ and ‘Soprano’, which began in 2007. Together these projects will involve expenditure of €25 million over four years, and around 450 households across four countries (Netherlands, Spain, Italy and the UK).

The Koala Project

The Koala project is taking place in the province of Groningen and is targeted at 1,000 older people and others with long-term health issues. The project experienced initial delays due to the number of professional interests that had to be aligned, but currently it has 600 users. It will run until April 2008

Patients with conditions such as diabetes and chronic heart failure are provided with videophones in their homes to give remote access to healthcare workers. A patient pushes a button on his/her TV remote control to create a live video connection to a nursing care centre. The patient's medical records appears on a nurse's screen at the online call centre and the nurse's face and name are displayed on the patient's TV. Medical devices such as blood pressure monitors or glucose level meters are monitored by software and the nurse/carer determines whether to provide treatment advice to the patient online or send a healthcare worker to the patient's home.

Koala has been financed through matching contributions from KPN (a telecommunications firm), Menzis (a health insurance company), Sensire (a home care provider, which provides the service centre), and Dutch government (Ministry of Economic Affairs) funding – the latter to cover the revenue cost element of the pilot and the cost of an independent evaluation. If the pilot is found to be successful and is continued into the long term, the expectation is that future revenue costs will be funded partly by government, and partly by healthcare insurance firms. Direct customer payment is not anticipated, as this is not seen as acceptable to the public.

On a bigger scale is the ‘Koala’ project – a telehealth initiative, and the largest single project in the Netherlands to date. (Like the USA, and indeed typical of many other

²⁰ Kinsella, A (2006) Switched on to Telecare: Providing Health and Care Support through Home-based Telecare Monitoring in the UK and the US, report from an invited conference session at the 10th World Multi-Conference on Systemics, Cybernetics and Informatics, July 16-19, 2006, Orlando, Florida, USA London, Housing Learning & Improvement Network

²¹ Kinsella (2006) op cit

²² Bierhoff, I., van Berlo, A., Abascal, J., Allen, B., Civit, A., Fellbaum, K., Kemppainen, E., Bitterman, N., Freitas, D., and Kristiansson K (2007) Smart Home Environment, in Roe, P (Ed) (2007) Towards an inclusive future: Impact and wider potential of information and communication technologies, Brussels, COST

countries outside the UK, the Netherlands main emphasis is more towards ICT solutions for addressing health issues than for dealing with social care needs).

Care services in **Norway** provided for around 200,000 users in 2005, with 40,000 living in nursing homes and more than 160,000 people receiving home care services either in community care housing or their own home. The Norwegian national care plan to 2015 articulates government interest in progressing ICT solutions to care needs²³.

Norway has also been involved in exploring the potential of smart homes since the mid 1990s, with the focus on subsidised municipal housing for older and disabled people. By 2005, 20 out of 434 Norwegian municipalities had built flats with smart home technology. In addition, an increasing number of new 'smart' properties, targeted at older people, are being built for the private market. However, a number of key issues, including specification of minimum nursing/care standards for ICT based services, call centre arrangements and response protocols remain to be resolved before Norwegian municipalities can mainstream smart home solutions²⁴.

In its national health care plan for 2007-10, the Norwegian government notes a recurrent theme in service user feedback: "Interaction is too poor and services are not cohesive enough. This applies both within the health service and in its interaction with other sectors...many patients experience that they themselves have to manage the interaction between agents. This lack of cohesion often comes to light when agents push their area of responsibilities onto others instead of cooperating on good solutions that serve their patients"²⁵. The national health care plan also emphasises the restrictive role that ICT has previously played in the evolution of integrated health and care service provision.

Because of this, the Norwegian government has chosen to prioritise the creation of an effective inter-organisational electronic co-operation framework through the development of an electronic patient records system, rather than specific telecare services. 'Te@mwork 2007' is the product of this emphasis - a national strategy for ICT infrastructure development in the health and social sector²⁶.

Related to this approach has been the establishment of the Norwegian Health Network in 2004 -a closed network for electronic communication in the health and social sector owned by five regional health enterprises.

More generally, while the Norwegian government is clearly aware of the wider social care possibilities created by ICT, the policy emphasis it has adopted is focused on the growth of telemedicine applications. This includes the establishment of Rural Medical Centres

²³ Ministry of Health and Care Services (2005) Long-term care – Future challenges Care Plan 2015: Report No. 25 (2005–2006) to the Storting, Oslo, Norwegian Ministry of Health and Care Services

²⁴ Laberg, T., Aspelund H., and Thygesen, H (2005) Smart Home Technology: Planning and management in municipal services, Oslo, Directorate for Social and Health Affairs

²⁵ Ministry of Health and Care Services (2006) National Health Plan for Norway (2007-2010)

Proposition to the Storting No. 1 (2006-2007) Oslo, Norwegian Ministry of Health and Care Services

²⁶ Norwegian Ministry of Social Affairs and Norwegian Ministry of Health (2007) Te@mwork 2007: Electronic Cooperation in the Health and Social Sector, National strategy 2004 – 2007 for Norway

combining telemedicine and ambulatory specialised teams²⁷. An important part of the Norwegian Government's efforts to expand ICT based telemedicine service provision is the establishment of a number of 'lighthouse' projects, which are essentially playing the same role as a number of demonstrator projects being adopted around the UK.

In **Denmark** (5.5 million inhabitants) all municipalities use electronic care systems for managing the care of people living at home. In total, social alarm systems are used to support approximately 70,000 (mainly older) people.

Nearly all home help staff and community nurses are equipped with an intelligent terminal connected to the care system in the municipality. These can be used to:

- Get address and appointment information
- Receive detailed information about the persons being visited, including diagnosis, medication and other relevant information
- Make notes about observations, new actions
- Send action points to colleges and specialists

Technical aids are provided free of charge to all who have a need, including communication and navigation aids to people with dementia.

However, very few people in Denmark have automatic monitoring systems installed. A number of pilot systems are running in different areas, and it is expected that this will develop considerably in the near future.

In the **Republic of Ireland**, there is currently no mainstream funding available for the implementation of telecare services. "[H]istorically there has been only limited funding for personal pendants and care phones ie social alarms...This funding has not been extended to cover the growing number of telecare sensors that are currently available to provide environmental monitoring, personal security and emergency response through the social alarm infrastructure"²⁸.

However, as Ireland has few alternatives to nursing home care, the potential role of telecare in enabling older people to live independently for longer is recognised to be significant. A recent pilot telecare safety project under the RAPID programme generated considerable improvements in levels of participant confidence and relief from anxiety. The outcomes of the project are now being formally reviewed, with an anticipated extension to a further 200 homes.

²⁷ Myrvang R., and Rosenlund, T (2007) How can eHealth benefit rural areas - a literature overview from Norway, Tromsø, Norwegian Centre for Telemedicine

²⁸ O'Neill, D (2007) Promoting safety, reassurance and dignity through telecare in Ireland, Journal of Assistive Technologies, Volume 1 issue 2, pp 18-21

The RAPID (Revitalising Areas through Planning, Investment and Development) Programme

The RAPID programme is an initiative to improve the quality of life of residents living within the 46 most disadvantaged areas in Irish cities and provincial towns.

Under the programme, a pilot telecare safety project was developed in 2006, aimed at improving home reassurance and support for 25 older people in the Drogheda area.

Subsequent to telecare equipment installation it was found: "The number of people fearing the type of fall event that two-thirds of the participants had previously experienced was reduced by over 50% as a result of having a telecare package in place. An improvement in confidence may help to mobilise those people who may not previously have risked leaving the home, and this is likely to have a major impact on the levels of social isolation felt by many older people. Two of the participants had previously not ventured out due to poor mobility and the fear of crime, and it is apparent that an appropriate package of telecare can transform the quality of life of such people"²⁹.

In **Italy**, the emphasis to date has again been more towards telehealth specific applications. These include trials to provide care remotely for older people suffering from heart failure after early discharge from hospital³⁰. While the trials to date have involved limited numbers, subsequent simulation modelling has been undertaken to assess the potential economic benefits arising from adopting a more general early hospital discharge programme for older people within the Marche region of Italy, with ongoing monitoring provided directly by hospital personnel using a video based homecare approach. The projected economic benefits deriving from this simulation involve cost savings of around 30% in the first year, and rising thereafter.

Assessment

The evidence shows that many countries recognise the potential benefits from adopting a telecare approach to mainstream service provision. Most are taking active steps to develop telecare services, although some are progressing this much faster than others, and there are evident differences of emphasis in terms of social and health care applications.

Measured against developments in a wide range of countries, Scottish progress to date has been good, and Scotland can consider itself to be in the vanguard of countries progressing to mainstream telecare service provision. As such it will be one of the first to secure widespread benefits from telecare service provision for its people.

VALIDATING TELECARE BENEFITS

It is currently difficult to fully quantify the benefits that arise from telecare. One reason for this is that telecare involves "a complex intervention consisting of a hybrid of technology and people-based services applied to a varied client-base with wide-ranging pathology and

²⁹ O'Neill (2007) op cit

³⁰ Gullà, V (Undated) "Tele-medicine is a driver for quality of life improving broadband application", mimeo

social capital"³¹. Another more basic one is that most telecare services to date are too new or (being pilots) too small to provide a suitable basis for imputing robust general results.

Hard evidence of the benefits – particularly cost savings – arising from switching to telecare and telehealth care service provision is therefore currently hard to come by³². However, a positive evidence base is beginning to develop with respect to a range of telecare services targeted at the elderly, and care management for those with chronic long-term medical conditions³³.

More general evidence is provided by simulation studies, such as the work discussed earlier that has been undertaken in Italy. Recent UK simulation work suggests that telecare focused on safety and security for older people could reduce the number entering residential care by 11% in the fifth year after implementation or perhaps by 25% after 20 years, depending on assumptions made about the rate at which telecare reduces entry and slows the progression of frailty. This suggests cost savings would take some time to build up³⁴. Others have found that investment needed in social housing stock to accommodate care-reducing ICT equipment could be recouped within three years through a subsequent reduction in care costs³⁵.

The evidence base will continue to develop rapidly over the next few years, both in an international context, and with specific respect to Scotland³⁶. One of the findings likely to emerge as the evidence accrues is that the front line organisations involved in telecare

³¹ Williams, G and Doughty, K (2007) Towards an evaluation framework for telecare services Journal of Assistive Technologies Volume 1 Issue 1 pp42-47

³² See Hersh W., Hickam D., Severance S., Dana T., Krages K., Helfand M. (2006) Telemedicine for the Medicare Population: Update. Evidence Report/Technology Assessment No. 131, Rockville, Agency for Healthcare Research and Quality; Whitten, P., Mair, F., Haycox, A., May, C., Williams, T., and Hellmich, (2002) Systematic review of cost effectiveness studies of telemedicine interventions British Medical Journal, Vol 324 pp1434-1437; Whitten, P., Johannessen, L., Soerensen, T., Gammon, D., and Mackert, M (2007) A systematic review of research methodology in telemedicine studies, Journal of Telemedicine and Telecare, Vol 13, pp 230–235, and Bensink, M., Hailey D., and Wootton R (2006) A systematic review of successes and failures in home telehealth: preliminary results Journal of Telemedicine and Telecare, Vol 12 (Supplement 3, pp 8–16) for an overview of international evidence. Croucher, K., Hicks, L., and Jackson, K (2006), Housing with care for later life: A literature review, York, Joseph Rowntree Foundation and Hurstfield, J., Parashar, U., and Schofield, K (2007), The costs and benefits of independent living, London, Department for Work and Pensions, provide a review of relevant UK evidence.

³³ Barlow, J (Chair) (2006) Building an evidence base for successful telecare implementation – updated report of the Evidence Working Group of the Telecare Policy Collaborative; Barlow, J., Singh, D., Bayer, S., Curry R (2007) A systematic review of the benefits of home telecare for frail elderly people and those with long-term conditions, Journal of Telemedicine and Telecare; 13: 172–179

³⁴ Bayer, S., Barlow, J., Curry, R. (2005) op cit; see also Audit Commission (2004) Implementing telecare strategic analysis and guidelines for policy makers, commissioners and providers, London, Audit Commission

³⁵ Tinker, A and Lansley, P (2005) Introducing assistive technology into the existing homes of older people: feasibility, acceptability, costs and outcomes, Journal of Telemedicine and Telecare Vol 11(Supplement 1) pp 1–3

³⁶ The York Health Economics Consortium study of the TDP initiative is due to report final findings in January 2009.

investment may not be the same ones that actually enjoy direct cost savings as a result. For example, social care investments may well generate health care savings as a consequence, or vice versa. If this proves to be the case, encouraging organisational collaboration to accelerate telecare provision will prove one of the key future challenges to overcome.

TELECARE IN SCOTLAND – EMBRACING THE FUTURE

In Scotland, as in other parts of the UK, “The key challenge for telecare services is now to move from the current pilot phase and into a mainstream service in order to support the independence and well-being of an increasingly large number of potential users”³⁷.

Over the coming months the Scottish Government will be developing a more detailed strategy for the evolution of telecare service provision in Scotland, focussed particularly on the period to 2010.

It will be important that this strategy builds on the significant progress made to date, and reinforces the role of Scotland as a leader in this area of service user improvement.

³⁷ Audit Commission (2004) Implementing telecare strategic analysis and guidelines for policy makers, commissioners and providers, London, Audit Commission

Telecare in Scotland: Benchmarking the Present, Embracing the Future

ANNEX 1:

SUMMARY OF TELECARE SERVICES IN SCOTLAND FUNDED UNDER THE TDP¹

Partnership	Key Elements of Telecare Service Development*	User Numbers Involved
Aberdeenshire	Developing a long term strategy Virtual care village pilot Expansion of intermediate care provision Long term condition management pilot	27 unit complex 4 places 20 older people
Aberdeen	Developing a long term strategy Implementing awareness training Post hospital rehabilitation pilot	5 flats
Angus	Virtual sheltered housing scheme Doorstoppers pilot (call centre monitoring of people calling at the homes of vulnerable people) Long term condition management pilot Rural virtual GP consultation pilot Intermediate care at home (rapid deployment) Use of demonstration houses for awareness raising	30 people 280 people 60-80 people 300 people 30 people 2 units
Argyll and Bute	Telecare service provision expansion Long term condition management pilot	1,500 people by 2008
Clackmannanshire	Respite accommodation provision for learning disabled Provision of communication support for people with cognitive problems	5 units
Dumfries & Galloway	Long term condition management pilot Sheltered housing upgrade	190 120
Dundee	Introduction of transferable lifestyle monitoring systems Bogus caller pilot (call centre monitoring of people calling at the homes of vulnerable people) Supported living for learning disabled pilot Transitional living pilot Implementing awareness training	5 systems 100 people 20 people 1 unit 200 staff
East Ayrshire	Sheltered housing upgrade Telecare package provision for vulnerable people Wrist based lifestyle monitoring systems pilot	2 units 112 people 25 systems
East Dunbartonshire	Upgrading existing call centre equipment Upgrading telecare equipment stocks	
East Lothian	Developing a long term strategy Implementing awareness training Telecare package provision for vulnerable people pilot	30 people
East Renfrewshire	Telecare package provision for vulnerable people pilot	50 people
Edinburgh	Sheltered property call system upgrade Remote door locking systems pilot Comprehensive smart house pilot Telecare package provision for vulnerable people	125 units 20 people 2 units 150 people
Falkirk	ICT upgrade of existing mobile emergency care service Passive alarm system upgrade Falls monitoring project extension Alarm pendant upgrade Smoke alarm linking to call centre service Epilepsy monitoring pilot Extension of 'zero touch' sensor provision	5,700 people 60-70 people 50 people 100 people 20 people 12 people 6 people
Fife	Lifestyle monitoring pilot Extension of existing telecare service provision	280 people
Glasgow	Core telecare service provision Enhanced service provision	750 people 150 people

Telecare in Scotland: Benchmarking the Present, Embracing the Future

Partnership	Key Elements of Telecare Service Development*	User Numbers Involved
Highland	Telecare service provision upgrade Enhanced service provision	3,264 people by 2007 300 people
Inverclyde	Telecare demonstrator centres Mobile telecare packages to support hospital discharge Sheltered housing upgrade	3 units 10 packages 123 units
Midlothian	Upgrade existing community alarm to a telecare service	170 people
Moray	Upgrade existing community alarm to a telecare service	110 people
North Ayrshire	Telecare service provision	40 people
North Lanarkshire	Upgrade existing community alarm to a telecare service Installation of video cameras in sheltered housing	17 sites
Orkney	Lifestyle monitoring pilot for dementia sufferers	4-8 people
Perth & Kinross	Core telecare service provision Enhanced service provision	1,200 people by 2008 100 people
Renfrewshire	Extension of existing telecare service provision	150 people
Scottish Borders	Core telecare service provision Enhanced service provision	3,150 people by 2008 250 people by 2008
Shetland	Upgrade existing community alarm to a telecare service Enhanced service provision	20 people
South Ayrshire	Implementing awareness training Extension of existing telecare service	200 staff 300 people by 2008
South Lanarkshire	Extension of existing telecare service	240
Stirling	Implementing awareness training Core telecare service provision Enhanced service provision	50 50
West Dunbartonshire	Sheltered housing upgrade Development of mobile assessment packages Core telecare service provision	1 site 350
West Lothian	Expansion of existing core telecare service Expansion of lifestyle monitoring	500 people 100 people
Western Isles	Implementing staff training Telecare demonstrator centres Upgrade existing community alarm to a telecare service	4 sites 85 people

*Note, the precise definition of 'core' and 'enhanced' service as referred to in this table varies from place to place, but a 'typical' core service would involve an alarm pendant, smoke alarm, heat sensitive monitor, flood detector, and PIR movement detectors, while a 'typical enhanced service might also involve bed/chair occupancy, fall detectors, medication reminder, wandering alert, and personal care aids (such as monitoring enuresis and epilepsy)

¹ Joint Improvement Team (2007) (August) Summary of Current and Developing Telecare Services in Scotland, Edinburgh, JIT