Aberdeenshire Council Telecare Project

Final Evaluation Report

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Aberdeenshire COUNCIL

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Contents

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Executive Summary

The Aberdeenshire Partnership is facing unique patterns of population growth, within a mixed geographical area of urban and rural environments, placing pressures on resources. Within this context the Scottish Executive granted £316,248 from the National Telecare Development Programme to the Aberdeenshire Partnership, for the period 2006-08, with the monies becoming available in February 2007, enabling Phase 1 of the implementation process. Crucial to management of resultant implementation was establishment of a partnership, representing stakeholders from the local authority, NHS Grampian, Robert Gordon University (RGU), voluntary sector and Registered Social Landlords, with flexibility to accept additional partners as required.

To enable implementation and evaluation, the Partnership, through Aberdeenshire Council, commissioned RGU to provide experienced telecare project management and final written documentation, relating to process and evaluation of Phase 1 of the project. During the course of the project telecare awareness training has been provided for 486 participants from health, social work and RGU, with 20 of those accessing additional training, in order to apply telecare within a home care support environment.

The project has achieved 31 completed installations of telecare and related technology, including Environmental Control Systems (ECS), with a further 9 installations pending. An additional 23 service users were assessed, with telecare either being deemed as inappropriate to their need at that time, or users declining telecare. During Phase 1 of the project all assessment, ordering, installation and initial review has been completed by the Telecare Project Officer, initial assessment being completed in conjunction with front-line staff for community based service users.

The process of implementation has been complex, resulting from difficulties in: engagement with frontline staff; ownership of processes required to include telecare in day-to-day operation, including integration into assessment, support planning and reviewing; geographical issues linked to responder provision; installation and maintenance; and need for ongoing research and development in a rapidly moving marketplace.

Procurement and installation, to date, has been completed on an individual basis, driven by the individualised nature of need. Provision of telecare at a low level of need may be supplied on a prescriptive basis, however enhanced telecare and related technologies require individualised packages, obtained through skilled assessment and spot purchasing. Relationships with providers have been essential to ensuring appropriate designs around such packages and have provided added value through: sharing of knowledge with the partnership; working on adaptations and new developments across the partnership and between service providers; and provision of discounts on various equipment.

Clear benefits have been demonstrated through the application of telecare and related technology. For service users there have been demonstrable advantages through assisting individuals to remain at home rather than consider residential care, or being able to come home from hospital with risks being appropriately managed and support targeted. Financial savings have been demonstrated in three main areas:

- Hospital days saved - £23,190
- Reduction in care home days -£301,600
- Reduction in sleepover nights - £4,260

This represents an overall financial saving of £329,050, within the period of the project, indicating potential for both service shift and future financial benefits to the Partnership.

Good practice has been demonstrated through the Grampian Telecare Group, establishing a forum for sharing of information, ideas and joint training events between the Aberdeenshire, Aberdeen City and Moray partnerships and more recently being joined by the Highland partnership. Further development of this relationship will potentially benefit aspects of procurement, service development and provision.

With £125,000 additional funding being made available from the Scottish Government for 2008-09, the Project is entering Phase 2 of implementation. During this Phase it is recommended the Aberdeenshire Telecare Project:

- Reviews and defines the role of the Aberdeenshire Telecare Group.
- Works with colleagues in Housing and Health to establish an Action Plan.
- Establishes clear assessment processes.
- Develops protocols and procedures.
- Ensures integration of protocols, procedures and processes are linked into existing structures and systems.
- Develops a training programme.
- Provides an accessible and defined support and advice service to front-line staff.
- Continues the development of effective partnerships with health, linking telecare and telehealth.
- Develops meaningful quality standards
- Continues development of linkages with neighbouring partnerships.

To enable these areas to be addressed the Aberdeenshire Partnership requires to establish a Project Manager to oversee the medium to long term implementation process, aiming at establishing telecare and related technologies into mainstream services.

Acknowledgements

Without the willing involvement of service users and their carers it would not have been possible to complete this project and evaluation process. I am deeply indebted for their input and their willingness to invite me into their homes and share their experiences.

I am also indebted to the staff from health, social services, housing and service providers who have worked with me throughout the last 15 months, making referrals, supporting assessment processes and installation of equipment. The learning process has been universal for us all.

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The views expressed in this report are primarily those of the author, however without ongoing support from the Aberdeenshire Telecare Group, and in particular Bill Stokoe, Strategic Development Officer (Community Care), this report would not have been possible.

Abbreviations

CSIP - Care Services Improvement Partnership

ECS - Environmental Control Systems

JIT - Joint Improvement Team

LA - Local Authority

NHS - National Health Service

OT - Occupational Therapy

PTG - Preventative Technology Grant

RCC - Regional Communication Centre

RGU - Robert Gordon University

SCT - Scottish Centre for Telehealth

SHO - Sheltered Housing Officer

SSA - Single Shared Assessment

TDP - Telecare Development Programme

TSA - Telecare Services Association

YHEC - York Health Economics Consortium





Introduction

There are number of principal drivers in the development of telecare and telehealth as tools in the provision of health and social care in Scotland.

These include:

- The concerns regarding how to meet the changing demands in the methodology of support and care provision for individuals,
- Quality of service provision, within a changing marketplace,
- Ensuring sustainability in both environment and supports within local communities,
- Establishing a responsive provision within diminishing resources,

As part of the Westminster Government's Spending Review 2005-08, £80m was made available by the Treasury in England, in the form of the Preventative Technology Grant (PTG). The aim was to roll out telecare provision across England via a variety of pilot projects, through local authorities and linked partnerships.

This was followed in 2006 with the Scottish Executive announcing an £8m grant for the development of telecare. The Scottish Telecare Development Programme (TDP) invited all health and social care partnerships in Scotland to bid for the monies. Each area was required to have their bids endorsed by the local Community Planning Partnerships and to bid on the basis of the following targets:

- Reduce delayed discharges from hospital
- Reduce unplanned hospital admissions
- Avoidance of admission to care homes
- Promotion of independent living
- Change in use of existing support/care resources
- Locally identified outcomes including efficiency savings.

Each local Partnership has started from a differing point with regard to implementation, with some partnerships developing base line systems, previously having little or no previous experience of telecare, while other Partnerships have explored the development of enhanced systems and alternative uses for telecare based on local need and previous experience.

Nationally, alarm based services have been developed across many local authorities, these being integrated into mainstream community care through community alarm provision and linked to a number of differing models of responder service. At the onset of the TDP 137,000 people benefited from a community alarm provision, across Scotland. (*JIT*)

However, one of the main challenges that remain is the ability to accurately quantify the benefits of telecare. This is due to the small scale size, variation in pilot projects, and varied methods of monitoring and evaluation. There is increasing anecdotal evidence that telecare, telehealth and interlinking technology is having an impact on the lives of service users and carers, which is assisting the case for promotion and implementation of telecare into mainstreaming of care service provision.

Robert Gordon University was commissioned by the Aberdeenshire Partnership to provide project management, monitoring and evaluation for the development and implementation of the initial 16 month period of the Aberdeenshire Telecare Project, including production of a final evaluation report. The aim of this report is to describe the process and findings of the pilot project commissioned by Aberdeenshire Council and partners.

Review of Telecare and Related Technology

Telecare is the name given to a range of technological interventions that support and enable people to be independent in their own homes, through use of systems of sensors and alerts. Telecare may be viewed as part of the continuum of technology that is emerging in the social and health care sectors that offers particular advantages for enabling individuals to manage long term conditions within a home environment, encouraging and facilitating a higher level of self care and assisting the process of avoidance of unplanned hospital admissions. However it also offers potential as a tool for support, intervention and management across client groupings.

The origins of telecare are seen in technology associated with nurse call systems, fire detectors and burglar alarms. Early development referred to smart homes and smart technology, or assistive and electronic assistive technology. In the last decade there has been increasing interest in the benefits of technology combined with alert systems to enable timely intervention, particularly for older people. This has led to the development and production of a range of equipment that provides standalone or remote alerting systems, providing for the management of situations where there is risk for the client of potential harm e.g. falls or wandering.

The use of telecare in provision of support and care needs to be essentially seen as a tool and as part of a process in enabling users to achieve a greater level of independence and having choice in how to live their lives. Independence may be defined as:

"…in a practical and common-sense way to mean simply being able to achieve our goals. The point is that independent people have control over their lives, not that they perform every task themselves. Independence is not linked to the physical or intellectual capacity to care for oneself without assistance; independence is created by having assistance when and how one requires it." (Morris, 1993)

In addition to the provision of alerts, telecare may also offer capacity to collect data which may be used to inform professionals and carers of patterns of behaviour, lifestyle and changing needs of the user. Installation and use of equipment that provides such data requires being clearly defined, appropriate consideration being given to ethical issues, objectives of use of equipment, and use of data.

Telecare may be seen as either standalone or connected to a central call centre. *Standalone telecare* equipment is ideal for people who have a live-in carer. This type of telecare equipment produces noises to alert the carer that attention is required, or soft tones or voice messages to remind the client of something important. It is not connected to a call centre and so there are no call centre monitoring charges for this equipment.

The range of standalone equipment includes:

A voice alert with sensor mats:

This produces a noise or voice message to alert the user or the carer in the same room. Such a response may be useful as a verbal prompt for someone at risk of wandering.

Bedside movement sensor:

This produces a sound to alert the carer that a person is getting out of bed or approaches an area of danger.

A movement sensor voice alert:

This produces a noise or voice message to alert the user or the carer in another room.

Community Alarms:

Aberdeenshire Council currently provide a range of Tunstall Lifeline 4000 Community Alarm systems as the standard equipment. This system sends a signal from the activated device to the lifeline dispersed alarm box, which then automatically dials a response centre. The response centre, the Regional Communication Centre (RCC), can tell what device has been activated, and by whom, and the response centre can then act in accordance with the Telecare Services Association (TSA) guidelines, to provide an appropriate after-alert responder service. This could include calling the person or organising a visit depending on the need of the person who produced the alert.

The main lifeline telecare equipment provided may include:

Pendant alarms:

These send an alert to the response centre if the person is in difficulties.

Fall detectors:

These automatically alert the response centre if a fall should occur.

Flood detectors:

These automatically alert the response centre if a flood occurs.

Smoke detectors:

These automatically alert the response centre if there is smoke.

Heat sensors:

These automatically alert the response centre if there is heat from a fire.

Pull cords:

These alert the response centre if a person is in distress.

Bed exit (bed occupancy) sensors (with or without light):

These automatically alert the response centre if a person does not get back to bed within a certain time period.

Wandering sensors:

These automatically alert the response centre if a person leaves a defined area within their home, or leaves the house.

Whilst the above equipment provides for the basic package of telecare equipment it is essential that this should not be seen in isolation. For some service users there may be a need for Environmental Monitoring systems to complement the community alarm equipment, in order to ensure the safety of individuals and mitigate risks. Such equipment provides data relating to individuals behaviour and lifestyle, aiding the determination of appropriate care management and response processes. This type of equipment may allow for monitoring of falls, wandering, use of specified equipment and living space. (See case studies for examples of use, Appendix 3).

The value of telecare equipment, as described above, can be demonstrated as being of importance in a variety of situations. The experience of West Lothian demonstrates taking a radical approach to service provision, particularly for older people, using telecare as a tool within an overarching shift from traditional residential care home provision, to that of home based support, and focusing on a person centred approach to need (*Bowes & McColgan, 2006*). Whilst in Aberdeen City the experience of providing an inclusive design, including the use of telecare, for supporting people with learning disabilities and autistic spectrum disorder, demonstrates the potential of technology to provide flexible response to complex needs (*Sergeant, Dewsbury and Johnston 2007*).

Nevertheless, access to telecare may be limited by a number of factors, linked to levels of disability and/or environmental factors. When considering telecare as a tool for appropriate, timely intervention or enablement for a user, accessibility is a crucial factor. For some users accessibility may be obtained through provision of additional technology such as environmental control systems.

Environmental controls enable individuals to operate a wide range of domestic appliances (see Figure 1) and other vital functions by remote control, such as community alarms, telephones and home security systems including front door locks and intercoms. Environmental control systems (ECS) can reduce reliance on the continuous help of a carer and/or family member. (See case studies for examples of use, Appendix 3).

Figure1 - Environmental Control Systems in the Domestic Environment

In order to access ECS and telecare equipment many users will also require an additional assessment ensuring provision of appropriate switch systems (see Figure 2). The switch enables the user to access a menu of options and operate a control system. Inputs include plate switches operated by hand, foot, head, arm or chin, and pneumatic switches operated by sucking and blowing.

There is no standard categorisation of telecare, although for the purposes of the TDP in Scotland the following categories have been suggested by the Joint Improvement Team:

- *First generation telecare* - covers 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* – refers to enhanced equipment which has evolved from the introduction of basic Community Alarm services and sensors such as smoke alarms and flood detectors. Second generation telecare includes sensors which 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* - refers to the improving and increasing availability of broadband, wireless and audio-visual technology, which 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.

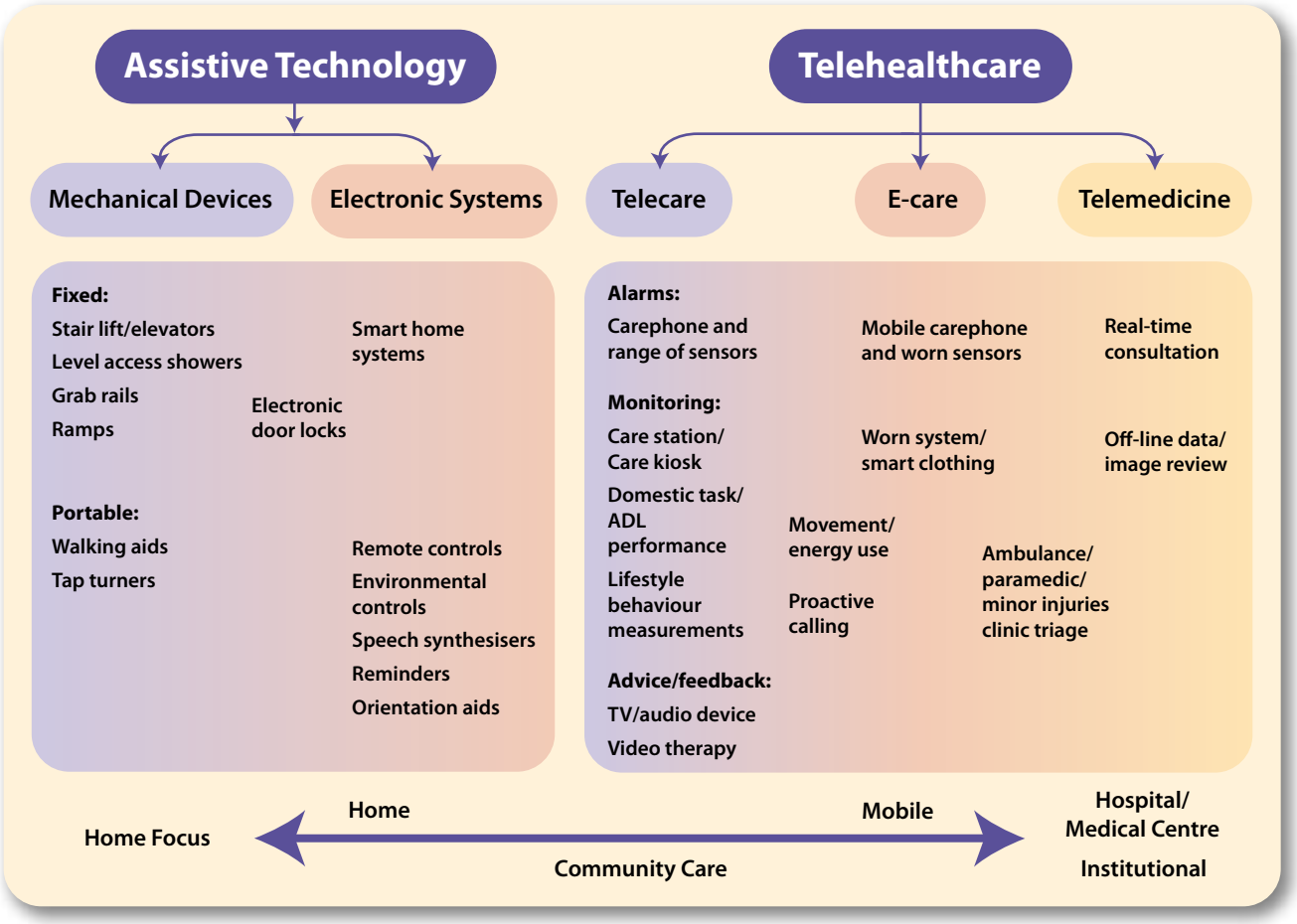
Telecare should essentially be viewed as one of the tools in a menu of assessment and interventions that may be offered to service users. Electronic assistive technology, including ECS and telecare may provide appropriate mechanisms to prevent admission to residential care and/or hospital and may be used in conjunction with devices that monitor individual user's health (telemedicine). As indicated in Figure 3, telecare is part of a continuum of technology that may be considered when identifying and meeting individual needs, including non electronic based equipment.

Telehealth equipment is emerging technology that enables the use of telecommunications to provide medical information and services between individuals in their own home, interfacing with designated medical professionals as appropriate to individual needs. This offers particular advantages for enabling individuals to manage long term conditions within a home environment, encouraging and facilitating a higher level of self care and assisting the process of avoidance of unplanned hospital admissions.

Future usage of technology will essentially combine the use of Telehealth, telecare and environmental based systems, providing for a holistic response to individual needs. These however will not work in isolation, the human element of support and care remaining an intrinsic part in the spectrum of health and social care provision.

Figure 2 - Selection of Switch Systems

Figure 3 - The Telehealth Umbrella for Technology (Doughty et al)



Telecare – Research Evidence

The Aberdeenshire Telecare Project started with an implicit understanding of previous research and development through members of the partnership. This section seeks to give an explicit review of policy, theory, research and development that helped guide this project.

The concept of Community Care, introduced in 1988, in response to financial pressures from changing demographic demands, had aimed at:

"encouraging choice, flexibility and innovation in a climate of competition", (*Lewis & Glennerster 2000*)

However, implementation of the policy was more problematic due to historical factors, structural issues and conflicts between theory and practice for practitioners (*Thompson 2000; Manthorpe 2004; Bowes & McColgan 2006*).

There were some significant changes in the way services were provided, however there remained a fundamental separation between health and social care provision. The aim of an inclusive healthcare and social care response, drawing the emphasis away from institutional provision towards a person centred approach, and encouraging users to have choice and ownership of necessary interventions did not easily translate into a universal response. Evidence of practical application of progress in establishing the flexible proactive models of supporting people within their own homes remains patchy, although areas of good practice have been highlighted in recent years.

Within a decade of the introduction of Community Care the pressures on services were growing, with the increasingly ageing population, limited financial and human resources, and a shift in lifestyles and changing structures of communities. In relation to social care provision, fundamental changes were initiated through the modernising agenda, with the introduction of *Modernising Community Care – An Action Plan (1998)*, with similar issues being highlighted in *Better Outcomes for Older People (2004)*, which emphasised the need for:

- Single shared assessments
- Shared information
- Financial and service management frameworks
- Joint resourcing and management

In promoting such change, technology was becoming a fundamental element of modern service provision and service management, with community alarm being introduced across a number of local authority areas from 1998 onwards and local authorities adopting updated electronic management tools. Combined with the nationally implemented Supporting People agenda, use of technology to support people within their own homes provided an opportunity to establish alternative opportunities to more traditional residential service responses to user need.

The use of technology in this manner was exploited at an early stage by West Lothian Council as part of a strategic response to re-shaping their residential care services for older people, in advance of the modernising agenda, outlined by the above documents but in line with the shift towards community care. At the time this was deemed a radical approach, however it remains at the forefront of service re-design across the UK and Europe (*Bowes & McColgan 2006)*. Other Councils introduced community alarm services around the turn of the 21st Century, however they have disregarded the rapidity of technological development, thus failing to invest in use of appropriate technology to advance service re-design and changing user demands. This in part may be due to the limited evidence that technology provides a valuable tool in service provision, difficulties in creative thinking and problems linked to organisational capacity (*Faife 2008; Johnson & Austin, 2005*).

From the 1990s the national agenda in Scotland, as well as England and Wales, has established a commitment to supporting people within their own homes and local communities. A significant number of policy documents, linking technology to service re-design and improvement, have been published since 1998, becoming more prevalent in the last few years. *Building a Health Service (2005); Delivering for Health (2005); A National Framework for Service Change in the NHS in Scotland (2005): Building a health service fit for the future (2005; Managing Long-term Conditions (2007)* and *Better Health, Better Care: Action Plan (2007)* all emphasis the need to address the increasing demands on service provision resulting from demographic changes and the need to develop models that encourage and enable increasing self-care and self-management, particularly of long-term conditions.

The model of change promoted through *Delivering for Health (2005)* advanced the shift from reactive provision to proactive intervention (see Figure 4), promoting a focused approach to individual need, including the user in their programme of intervention, utilising technology and education to encourage self-care and self-management.

Simultaneously, use of telecare was entering the national agenda. Small pockets of pilot projects were appearing, however the evidence was considered restricted *(Alaszewski A and Cappello R 2006)*. The limited evidence base, however, was offering a potential tool to aid the complex problem of achieving an effective response to changing need.

"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… However, this will require extra investment in the short-term, whereas any cost benefits will only become clear in the longer term to other parts of the health and social care system" (Audit Commission 2004)

Such policy documentation led to the announcement of the £80 million Preventative Technology Grant (PTG) by the Department of Health, for England and Wales, in 2004. The aim of the grant was to support partnerships, consisting of social services, health, housing, voluntary and independent sectors, users and carers, with the local authority taking the lead, to provide telecare that would support an additional 160,000 older people to live at home *(Building Telecare in England 2005, Telecare Implementation Guide 2005)*. The PTG provided funding for a two year period, from April 2006, enabling partnerships to establish pilot projects specifically aimed at:

- Reducing the need for residential/nursing care;
- Enabling the appropriate redirection of resources;
- Increasing choice and independence of users;
- Improving the quality of life for carers;
- Assisting with the care and support for people with long term conditions;
- Improving home safety;
- Supporting hospital discharge and intermediate care.

The TDP was announced by the Scottish Executive in 2006, making £8.35 million available across the 32 local authority (LA) areas, for 2006-08. The LA's were required to work in partnerships, encompassing local authority departments, health, service providers, users and carers. The aim of the funding was -

"…to ensure that telecare becomes an integral part of community care service provision." (JIT 2008)

The projects would be the subject of a national evaluation carried out by the York Health Economics Consortium, whose principal aims were to evidence shifts in service provision in the following areas:

- Delayed discharges from hospital
- Unplanned hospital admissions
- Avoidance of admission to care homes
- Promotion of independent living
- Change in use of existing support/care resources
- Locally identified outcomes including efficiency savings.

Figure 4 - Dimensions of Paradigm Shift indicated in Delivering for Health (2005)

Current Model	Evolving Model of Care
Geared towards acute conditions	Geared towards long-term conditions
Hospital centred	Locally responsive
Doctor dependent	Team based
Episodic care	Continuous care
Disjointed care	Integrated care
Reactive care	Preventative care
Patient as passive recipient	Patient as partner
Self care tolerated	Self care encouraged and facilitated
Carers undervalued	Carers supported as partners
Low tech	High tech

The TDP aimed at contributing to the four community care outcomes (see Figure 5), with returns to July 2007 indicating a significant contribution, with additional outcomes recorded, as a result of the programme.

In real terms local partnerships did not receive the funding until late in the first financial year, due to time taken in preparation and submission of partnership action plans to the Scottish Executive. This created an initial hiatus in implementation of telecare for many partnerships, however as seen in Figure 3 strides have been made to adopt the use of telecare across Scotland, utilising technology in a proactive and effective manner.

Concurrently, the agenda for change focussed on the need to review the structures of service provision. *The 21st Century Social Work Review, 2005* emphasised the need for a person centred approach to service provision, with professional and service boundaries being more integrated. Supporting the principles of this document, specific service reviews have been commissioned by the Scottish Executive and Scottish Government in relation to services for older people and housing needs.

The Future Care of Older People in Scotland 2006; Time to Move? A Literature Review of Housing for Older People 2006; A Review of Sheltered Housing in Scotland 2007; and *Housing Issues for Older People in Rural Areas, 2008* all highlight the need for individualised approaches, with the needs and aspirations of the older population reflecting that of the general population, thus requiring a creative response at a time when resources are limited and user/carer expectations are high.

However, the application of telecare across Scotland is currently on a small scale, albeit considered to be in advance of other related programmes across Europe (*JIT 2008*). Pilot projects do demonstrate that telecare is generally having a positive small-scale impact on service user's lives *(Alaszewski A and Cappello R 2006)*. The difficulties in demonstrating robust effectiveness of telecare is linked to the diversity in pilot projects and size of the project and there remains a lack of standardised definitions and code of practice. Equally there remain similar difficulties in application, as identified in implementation of the modernising agenda for health and social care, of which telecare must be viewed as an integral part.

Figure 5 - Impact of Telecare on National Outcomes 2006/7 – 2007/8 (JIT)

Measurable Outcomes for TDP	Anticipated TDP contribution 2006/7 & 2007/8	Recorded TDP contribution at July 2008
* Reduce the number of delayed discharges from hospital	400	2,706 hospital bed days saved
* 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	6,900 bed days saved
* Increase the number of persons able to maintain themselves at home through receipt of a telecare service (with support)	3,800	2,137 more people supported
** Reduction in sleepover		8568 nights
** Reduction in check visits		384,517

** National Outcomes ** Additional Recorded Outcomes*

In order to achieve the change process required to nationally implement telecare, as part of the overarching modernisation agenda in health and social care, a number of factors appear to have to be taken into consideration. These primarily appear to be linked to:

- Underpinning anxieties related to assessment and management of risk;
- Fear of change and issues linked to human interaction;
- Professional roles;
- Methods of application – from theory to practice.

None of the above is necessarily mutually exclusive.

Research indicates there is a need for a core skills base, which requires being at the heart of service provision, having practitioners and teams with "specialist" knowledge integrated into teams as part of a shared resource, or practitioners who champion the concept and implementation processes, rather than being an external body giving rise to potential issues around accessibility *(Faife 2008; Alaszewski A and Cappello R 2006)*. The crucial element in achieving an effective response, advocated by policy documents, appears to be flexibility and creativity in determining methods of redesign and service application *(Kerr et al 2005, Faife 2008)*. The Joint Improvement Team (JIT), who are managing the TDP on behalf of the Scottish Government, aim to promote the use of telecare, beyond that of *first generation* (community alarm), into daily community care practice across partnerships, encouraging the proactive demonstration of cross disciplinary and boundary working.

The application of telecare, whilst closely linked to enablement and independence, does have a valuable function in relation to mitigation of risk, utilising a monitoring element which provides data to support care management functions, purchasing of appropriate services for individuals and providing information to carers regarding the user's use of environment and day to day needs. The use of technology to provide such data, as well as support, does however present a number of ethical considerations.

Concerns linked to methods of data collection, storage of data, use and access to information, monitoring, informed consent and the impact technology may have on the creation of dependency have been raised in a variety of forums. The protection of individual users and their carers requires to be of prime concern throughout planning and implementation processes of both pilot projects and long-term application (*Breakwell et al 2006, Wey 2007*). Currently there are no established ethical frameworks for application of telecare, although guidelines are available through a number of sources including statutory and voluntary agency sources, *(CSIP 2005, Department of Health 2007, Wey 2007)*. Ongoing research through Lancaster University's Ethical Frameworks for Telecare Technologies for older people at home is working in collaboration with a number of European stakeholders to establish a forum for debate and longer-term framework in which telecare and related technologies may be ethically applied.

In the short to medium term a number of core principles to be considered in developing an ethical base for practice have been established. These are based on concepts of Non-maleficence, Beneficence, Autonomy and Justice.

- "*Non-maleficence*" simply means "do no harm". In other words we need to ask ourselves are we in danger of doing more harm than good? For example, considering whether there is a risk that a piece of equipment may lead to more confusion or distress.

- *Beneficence* means striving consciously to be "of benefit" to the person. In other words the intention should be to benefit the person with dementia, for example by enabling access to support or help if they fall or helping them to take their medication.
- *Autonomy* refers to respecting the person's rights to things like self determination, privacy, freedom, and choice. So, for example, if a device such as a sensor mat is used to help monitor falls risk, would it be used just to tell the person not to walk, or get up, or would the person be offered a companion to walk with safely?
- *Justice* means treating everyone fairly. For example providing equal access to technology, or taking into account diversity and individual differences." *(Wey 2007)*

Such principles require to be supported by clear policies and procedures, which should be integrated into the mainstream processes of assessment, planning and review, cognisance being given to key issues linked to a person centred approach, choice and aspirations, support to take informed risks, and the rights of the individuals and their carers *(CSIP 2005, Department of Health 2007*).

Aberdeenshire in Context

The population of Aberdeenshire is 235,440 (2005-06) living in 103,620 households. Aberdeenshire is a diverse area, with a combination of towns, villages and widespread rural communities, which has seen significant growth in recent years with families settling around towns and villages, often commuting to Aberdeen and the growing industrial developments around the edges of Aberdeen City, e.g. Portlethen, Dyce etc.

With the growing working population there has been significant growth in the older population, as well as children and adults with physical and learning disability needs. The older population has been growing around 1,000 per annum over the last 3 years, with a similar increase being seen in adults in the 18-64 age range (see Appendix 1). Such growth is high in Scotland, only being seen elsewhere in Highland and Falkirk local authority areas, whilst other authorities are experiencing a decline.

Within this context pressures have increased on service provision within Aberdeenshire, particularly with respect to demand on Home Care services, Sheltered Housing and Supporting People. 2005-06 figures given by Audit Scotland highlight the Home Care hours as being particularly pressured, with a need to address the shortfall in meeting demand. The Home Care Services Statistics Release from the National Statistics Publication for Scotland 2007 indicates that whilst there is a levelling off of the number of users of home care services nationally, there is a trend to users requiring increasing levels of support, including intensive services as indicated in Figure 6 below.

These statistics have been collated on a national basis, however account needs to be taken of Aberdeenshire's unique growth in population, with the resultant impact on homecare provision. In the case of Aberdeenshire there is a strong probability, based on the data indicated in Figure 7, that the demand on homecare services will increase in the coming two decades, in response to the percentage increase in population.

In conjunction with the national trend for additional client hours, as the support needs of the ageing population increases, it is anticipated that Aberdeenshire will also see an increase in the demand for client hours. This is already demonstrated in the rise in demand between 2004-05 and 2005-06 of 71 users and an increase of a further 141 users between 2005-06 and 2006-07 as indicated in Audit Scotland performance information.

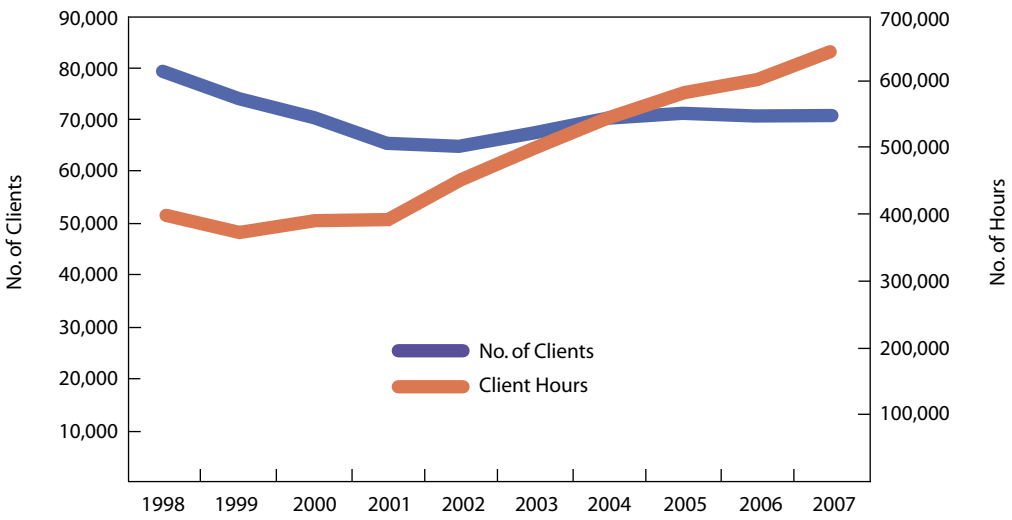
In addition to demographic changes, the geography and economy of Aberdeenshire pose challenges with respect to: recruitment and retention of staffing; development of localised responses to need, that provides targeted and timely intervention to individualised need; robust communication systems; and cultural variations linked to geography, indigenous and transient populations.

Figure 7 - Projected percentage changes in population (2004) based by broad group; selected years (Aberdeenshire)

	2010	2014	2024
All Ages	+3	+4	+5
0-15	-6	-11	-20
16-59	+1	-1	-9
60-65	+21	+39	+81
75+	+19	+35	+101

Service provision in Aberdeenshire has included a basic Community Alarm service, which was established 25 years ago across the Grampian area. This provision is traditionally managed through the Homecare service, with Homecare Supervisors taking on responsibility for taking referrals, assessment and purchasing of basic lifeline units. The linkage to care management and occupational therapy services has not formally existed, the community alarm service being viewed as a peripheral service to support planning and review processes.

Figure 6 - Home Care Clients and Hours Provided, 1998- 2007 (National Statistics Publication for Scotland December (2007)



In 2001 a working group was established by Aberdeenshire Council, to explore more fully the potential of electronic assistive technology to:

"Enable people with disability to retain or regain control of their personal environment, and to improve quality of life" (Internal Aberdeenshire document)

Whilst the project, which was operational from January – December 2003, succeeded in providing 20 service users with technology, there were a number of problems experienced. These were due to:

- Staff taking on the project work in addition to their existing role;
- Limited commitment and resourcing;
- Inadequate systems for purchasing, tracking and storage.

The project fell by the wayside and purchasing of telecare in the intervening period has been on an ad hoc basis, with funding being sought through a variety of sources including care management and occupational therapy budgets, donations and private purchase. Whilst a number of installations of telecare and ECS have occurred between 2003 and now, a number of these have suffered from inadequate maintenance contracts and poor de-commissioning, resulting in wastage and difficulties in re-cycling equipment.

The Aberdeenshire Telecare Project

Foundation for the Aberdeenshire Telecare Project

Aberdeenshire Council set out their proposal to the Scottish Executive for Stage 1 Funding in December 2006, with funding being allocated in early 2007. The initial funding allocation was intended for 2006-07 and 2007-08 and whilst there were delays in allocation the deadlines were not initially extended. This placed all partnerships under pressure to establish their pilot projects within compressed timeframes. Aberdeenshire Council employed a full-time Telecare Project Officer, through Robert Gordon University, in April 2007, to work alongside the designated Lead Officer and the Aberdeenshire Telecare Group to establish the pilot project.

The aims of the pilot project were to establish telecare provision in North, Central and South Aberdeenshire, in order to:

- Minimise risk
- Promote independence
- Prevent long-term admission to residential care
- Reduce unplanned hospital admission
- Enable early discharge from hospital
- Monitor individual needs
- Provide for part of an intermediate care package
- Support carers

The intended initial focus of the project was older people, with the key elements of the telecare pilot project being:

- Development of a long term strategy
- Development of a virtual care village pilot
- Development of intermediate care provision
- A long-term condition management pilot

As Aberdeenshire Council already has a contract with Tunstall, for provision of Community Alarm equipment, the decision was made to also trial the effectiveness of other suppliers and equipment connectivity in relationship to meeting service users' needs more effectively.

Within the partnership, lead responsibility for the development of the long term strategy was to sit within the housing section of the local authority, whilst social work services were taking the lead responsibility for the management and implementation processes of the telecare project.

The project was to be evaluated by York Health Economics Consortium (YHEC), commissioned by JIT to evaluate the TDP. Robert Gordon University was commissioned by the Aberdeenshire Partnership to evaluate local outcomes.

Methodology

The project was primarily based on use of case study, triangulating data from a variety of sources. Research in a social work and healthcare setting is complex, due to the human element, variables in response and difficulties in capturing effective data (*Cheetham et al 1992, Breakwell et al 2006)*. Use of more than one method of collecting data is therefore an appropriate mechanism to demonstrate theoretical relevance of findings from a study. In this project data is obtained from three principal sources:

- Referrals and assessment material;
- Diary techniques recording alert and responses from one project site;
- Questionnaires to principal stakeholders.

This was further supported by individual interviews, where additional information was required to support initial findings.

A qualitative approach, utilising information obtained from questionnaires and interviews with service users, carers and staff was adopted. Data collated at a main focus of the project, Urybank Sheltered Housing Scheme, over a period of 9 months assisted establishment of a picture of equipment usage and impact on the support services accessed by users.

Diary based data was collected over three quarters at Urybank Sheltered Housing Scheme, based on alerts sent out by telecare equipment and types of response required from staff. In the first quarter, data collected was based on alerts from the pre-existing community alarm system, prior to installation of enhanced telecare equipment. Data collected during the 2nd and 3rd quarters reflected changes in alert rates and response requirements to individual user needs during the installation and post installation periods.

Questionnaires for users and their informal carers were used as a supportive tool, providing additional information from users and their carers living at Urybank Sheltered Housing Scheme. In most cases questionnaires were completed through direct interview with users and their carers, with additional information being sought through interviews in cases where diary based data indicated increased use of telecare throughout the 2nd and 3rd quarters.

Collection of similar diary based data for community based service users was more difficult to collect, in this manner, due to variations in methods of alerts and responder services. Therefore there was sole reliance on questionnaire based information for this group of users and their carers.

Questionnaires were also used to gather evidence of effectiveness of processes for the Aberdeenshire Telecare Group and frontline staff making referrals. The Aberdeenshire Telecare Group was established prior to the onset of the project, membership including representation from main stakeholder groups. This group has been fluid throughout the project, with some members being co-opted during the last 16 months although a core group meetings regularly throughout this period. Frontline staff were primarily Aberdeenshire Council employees, mainly Occupational Therapists, with some referrals also being made from Care Management and Homecare staff.

The Aberdeenshire Partnership

For the purposes of the Pilot Study the Aberdeenshire Partnership consists of Aberdeenshire Council, NHS Grampian, Robert Gordon University, Castlehill Housing Association, Alzheimer's Scotland, Age Concern Scotland, Scottish Centre for Telehealth and Regional Communication Centre (RCC). Whilst the above groups represent the partnership, membership of this group is fluid, according to the needs of the project.

The role of Robert Gordon University in the partnership is linked to a contractual requirement to provide project management, advice, consultancy and training relating to TDP. This was to be achieved by working in partnership with Aberdeenshire Council, NHS Grampian, Housing and Social Care Providers, Service Users and their carers, with the author of this report being appointed in the role of Telecare Project Officer for the period April 2007 to August 2008.

The initial focus of the Aberdeenshire Telecare Project was development of services for older people, in line with the initial telecare programme direction. The theoretical membership of the partnership provided for broad representation of all interested parties, with the voluntary agencies representing users and carers, feeding back views from a variety of focus groups. The partnership established a regular monthly pattern of meetings of the Aberdeenshire Telecare Group at the onset of the project, with representatives of all the above groups being invited.

In practice the attendance at groups did not always reflect the full breadth of the partnership, with representation from local authority housing policy and operations not being available during the period April 2007 to August 2008, pressure of work being cited as the reason. Attendance at the meetings from other representatives was variable, in the latter stages an increasing number of apologies being experienced, through pressure of work and higher priorities. This reflected on the level of commitment to the implementation of telecare and telehealth across the partnership, with one senior manager at the mid stage of the project stating:

"…I am hearing the same thing about telecare at every meeting I go to…it is a waste of my time to hear the same thing time and again…we need to consolidate these meetings."

At the onset of the project there had been clear indication of strategic buy-in to the development of telecare, within the partnership. However regular reporting mechanisms, with inclusion of senior managers in the implementation processes, have been patchy. This has been primarily due to key vacancies in senior management posts and changes in staff. In order to develop effective integration of telecare into community provision there requires a commitment from leaders and managers within partner organisations *(Care Services Improvement Team 2005)*.

Whilst the Aberdeenshire Telecare Group has achieved considerable momentum, initiating the pilot project and overseeing the first phase of the implementation of telecare within the partnership, there does need to be a review of the future role of the group.

Comment

It would be appropriate for any revision of the group to take account of the following role requirements, to ensure future effective functioning:

- Clear terms of reference.
- Have authority for the programme and its outcomes.
- Develop a clear programme plan and have authority to take corrective action.
- Ensure clear financial planning and routes for expenditure.
- Have decision making powers.
- Give direction and guidance to the Project Manager/Officer.
- Regularly review available funding from a variety of sources.

Figure 8 - Characteristics of Tenants (Urybank)

Client Group	Male	Female	16-64	65+
Older Person	4	4		8
Mental Health				
Dementia		1		1
Physical Disability	3	6	5	4
Learning Disability	2	2	4	
Substance Misuse		1	1	
No Identified Need	1	1	2	
TOTAL	**11**	**16**	**14**	**13**

Project Development

Urybank Sheltered Housing Scheme

The partnership agreed the initial target for the project would centre round a sheltered housing scheme, offering:

- A central focus for the implementation of enhanced telecare equipment;
- Opportunity to safely explore issues of connectivity;
- Broad range of individual support and care needs;
- Potential hub for application of virtual care.

Urybank Sheltered Housing Scheme offered a unique setting with tenants representing most client groups (see Figure 8) and all age groups from 21 to 86 years.

Initial contact with tenants at Urybank was made directly through the Sheltered Housing Manager and Sheltered Housing Officers (SHO's). A letter of introduction and information leaflet was sent to all tenants, explaining the aims of the project (see Appendix 1). A profile of tenant needs was provided by the SHO's and contact was made with frontline professional staff explaining the project aims, requesting information relating to assessments, care plans and risk management plans. Not all tenants were subject of "live" social work services intervention, some being in receipt of long-term homecare support, others purchasing their support privately and a small number being resident in the scheme with no apparent particular need for the additional services offered by sheltered housing.

The SHO's and frontline formal carers, primarily home carers, were anxious about the application of telecare within the sheltered housing scheme. Time was spent with staff on a small group basis and 1:1 explaining the use of telecare and the impact it may have on users, informal carers and the lives of formal carers. For the formal carers concerns appeared to be centred around job security, with staff expressing concerns around changes in job descriptions and potential loss of shifts. Throughout the initial six months of the project the needs of frontline staff were repeatedly reviewed, with staff anxieties appearing to diminish slowly. In some cases the level of scepticism did not appear to diminish, with two staff members reporting in July 2008:

"The tenants don't use their equipment properly, we weren't trained how to use it and neither were the tenants, it was a waste of money...in fact for (Client X) it was just the end of her (reference being made to a tenant who had a stroke shortly after the equipment was installed), that's why she had to go into residential care." (Home carer)

"The old system was much better, we knew how that worked…now we have to press different buttons on our handset depending on where the alert is coming from and it is more complicated" (SHO)

Engagement with frontline social work services staff, involved with users living at Urybank, tended to be slow. Initial contact was made by telephone, introducing the project and requesting a meeting to discuss user needs and the potential impact of enhanced telecare on their current package of support. Meetings with Care Managers and Team Leaders were arranged throughout May and June 2007, pressures of work and annual leave being cited as reasons for various delays. Information requested from Care Managers, to enable the assessment of telecare equipment, was slow in coming for a few clients and not forthcoming for many.

In July 2007 an approach was made to the Team Leader, who advised:

"…just do the assessments yourself, you will get it completed quicker that way."

Tenants do hold copies of their assessments, support plans and other relevant documents, in a yellow folder. All tenants involved were willing to share documented information, however a number of support plans were incomplete or were not reviewed on a regular basis, thus information was not always accurate.

From July - August 2007 all tenants were invited to participate in the project, with 3 tenants declining at this stage. The remaining 21 tenants were assessed regarding suitability for enhanced telecare and ECS. Where possible this was done in conjunction with Care Managers and Occupational Therapists. During September 2007 two vacant tenancies were occupied and the new tenants informed of the project, with both wishing to be included, bringing the total number assessed for potential equipment to 23.

As part of the assessment process providers of telecare equipment and ECS were invited to visit the Urybank scheme and talk to frontline staff and tenants regarding the available equipment. 3 service providers attended separate ½ day events on site to provide information and demonstrations, enabling Care Managers, Occupational Therapists, Home Care staff, SHO's and their managers, and tenants and their families to attend.

The assessment process, in the main, was carried out directly by the project, using information sent by the Care Manager and Occupational Therapists to the project. In four instances the Care Manager or Occupational Therapist was present during the assessment. Of the 23 assessments carried out it was agreed that, for 15 tenants, enhanced telecare, ECS or non electronic based technology (e.g. Magiplug) would be an appropriate solution to individual need.

At this stage of the project the level of information the tenants held relating to technology and its impact on the home environment was notable. Several tenants advised the project of the type of equipment they wished access to, in order to improve their safety in their own home and enable independence. A further 3 tenants were assessed as possibly benefiting from enhanced telecare and ECS, however due to issues linked to the Adults with Incapacity Act, their Care Managers appeared reluctant to engage with the project, and further assessment and installation has not yet been possible.

Concerns were expressed by a number of frontline staff regarding the potential to socially isolate service users by installation of telecare. It is essential, as part of the assessment process, to clarify the purpose of the telecare and/or ECS equipment, ensuring the advantages and potential disadvantages of installation are fully explained to the user, their carers and professionals involved. For one tenant at Urybank the decision not to provide enhanced telecare was based on the poor value such equipment would provide to her quality of life. Her need was ultimately better met through the provision of a traditional day care placement.

During September – December 2007 equipment was ordered and installed in 14 tenants' homes, Figure 9 outlines the main characteristics of the tenants receiving enhanced telecare and ECS. The installation process was slow for a number of reasons as outlined below. Regular newsletters were sent out to tenants and staff between August 2007 and February 2008 providing information regarding the progress in the Urybank element of the project.

During the period September – December 2007 initial data relating to alerts and response types was collated, providing the basis for data collated from January – June 2008, aimed at demonstrating the impact of equipment on the daily lives of tenants and their carers.

Figure 9 - Characteristics of Tenants Receiving Telecare and ECS (Urybank)

Client Group	Male	Female	16-64	65+
Older Person	3	2		5
Mental Health				
Dementia		1		1
Physical Disability	2	6	5	3
Learning Disability				
Substance Misuse		1	1	
TOTAL	**5**	**10**	**6**	**9**

Comment

The process of change management requires a whole systems approach. The implementation of telecare requires a fundamental shift in social work and healthcare systems. To assist this change process the following will enable the Project to move towards a mainstreamed service, with frontline staff taking ownership for telecare:

- Provision of dedicated project post(s) which require to be time limited, yet flexible to support the change management process;
- Role of project officer to be focused on the provision of "expert" advice and consultancy to fellow professionals;
- Creation of a supportive and collaborative mechanism for skills development across the partnership, integrating skills based learning and development into current mainstream provision;
- Establish a forum for provision of up-to-date evidence and knowledge, enabling an environment to support the development of critical and reflective practice.

Community Based Project

The Community based element of the project was initiated in December 2007, Community Care and Occupational Therapy Team Leaders being invited to identify and refer users who may benefit from enhanced telecare. From January 2008 referrals were being received from teams across Aberdeenshire, with the rate increasing over the few months, as seen in Figure 10. The drop in referrals in June 2008 reflect the stage in the project where staff were requested to place referrals on hold, whilst the evaluation questionnaires and interviews were being carried out and an interim arrangement was agreed for Phase 2 of the project.

From January – June 2008 assessment visits were carried out to all 36 service users. For most service users this was initially in conjunction with the Care Manager, Home Care Manager or Occupational Therapist. Follow-up visits were generally carried out by the Project Officer, on her own. Referrals came from across the Aberdeenshire area, some of which followed on from training events (see below), with the majority coming from the Central area, where the Urybank Sheltered Housing Scheme is sited. Two Occupational Therapists in South Aberdeenshire were primarily responsible for the referrals in their area. The key to referrals appears to be based on an awareness of the value of telecare and/or ECS, with an enthusiasm to be creative in response to user need.

An additional challenge for an increasing number of community based users has been accessibility to appropriate responders. As part of the initial assessment all service users were required to have some responder provision in place. For one service user this was initially a challenge. On examining her social contacts it was established she was a member of a literary group which met regularly at her house. Fellow members indicated a willingness to act as responders, on request, enabling the user to access appropriate support through telecare. In considering potential response support, professionals, users and their families may be encouraged to look beyond traditional family groups. However this does not resolve the problem with all users, in a time when demographic and geographical changes are resulting in increasing numbers of people living alone and in comparative isolation. Therefore alternative responder provision needs to be addressed, in line with the implementation of telecare.

As with the group assessed from the Urybank Sheltered Housing Scheme, the largest client group referred to the project were people with physical disabilities (see Figure 11). Given the intended initial focus of the project was for older people a call went out to Team Managers in February 2008 to encourage referrals for older people, resulting in a small rise in referrals for the 65+ group, from February – May 2008.

Figure 10 - Source of Community Based Referrals

Month	North	Central	South	Total Referrals
Jan 2008			1	1
Feb 2008	1	2	2	5
Mar 2008		7		7
Apr 2008	3	2	3	8
May 2008	3	3	5	11
Jun 2008	1	2	1	4
TOTAL	**8**	**16**	**12**	**36**

Figure 11 - Characteristics of Community Referrals

Client Group	Male	Female	16-64	65+
Older Person		5		5
Mental Health	2		2	
Dementia	1	4		5
Physical Disability	7	6	12	1
Learning Disability	4	7	8	3
Substance Misuse				
TOTAL	**14**	**22**	**22**	**14**

Reasons for referrals to the project were diverse, with some service users, following telecare specific assessment, being identified as being unsuitable for receiving telecare or enhanced telecare. Reasons for not providing telecare have varied and include:

- Basic Community Alarm meeting telecare needs;
- No telephone line available – client unwilling to pay for connection;
- User concern about the intrusion that telecare may have on their daily life;
- Alternative service provision identified to meet needs;
- Information requested from professionals not made available – assessment pending.

Of the 36 service users assessed for telecare with or without ECS, 29 were assessed as benefiting from enhanced telecare, in some cases including ECS in order to ensure access to the telecare package (see Figure 12). Note that one user is not included in the evaluation process for reasons explained later.

For the 29 Users identified for telecare and ECS installation, 16 installations were completed between January – June 2008, 9 remain pending and 4 installations failed to occur due to either service users deciding not to continue with the process or death of the service user.

Figure 12 - Characteristics of Community Based Users with Telecare and ECS or Installations Pending

Client Group	Male	Female	16-64	65+
Older Person		4		4
Mental Health	1		1	
Dementia		3		3
Physical Disability	5	5	9	1
Learning Disability	3	7	7	3
Substance Misuse				
TOTAL	**9**	**19**	**17**	**11**

Comment

In Phase 1 the process of referral has been through the Project Manager and latterly via SSA through the Strategic Development Officer. The long-term goal is to fully integrate telecare into the current processes, however to achieve this a phased process of referral and assessment through an identified "specialist" or "champion" would provide front-line staff with support and advice, enabling them to gain confidence and knowledge in telecare and related technology and in longer term encourage a proactive integrated service to develop.

To achieve this it is essential that processes for management of referrals for enhanced telecare be established, ensuring that short, medium and long-term procedures are clearly planned to enable integration into mainstream practice. This will require development and establishment of:

- Flexible policies and procedures relating to application of provision, including consent, ethics and risk management;
- Criteria for accessing telecare, ECS and monitoring systems;
- Charging policies, where applicable.

Assessment Ordering and Installation

Assessment

In Aberdeenshire all referrals for standard community alarms are made through designated Home Care Supervisors, who carry out assessments and arrange installation. This is a historical method of assessment and installation with linkage to care management, planning and review processes being peripheral to the role of Care Managers and other Professional staff.

At the onset of the pilot project the Single Shared Assessment (SSA) was considered the appropriate starting point for access to enhanced telecare provision. Discussion through the Grampian Telecare Group, a joint forum of Aberdeenshire, Aberdeen and Moray Councils, the RCC and NHS Grampian raised concerns that the SSA, in the format available at the onset of the project, was inadequate to fully meet this expectation. It was however agreed that the SSA would be the appropriate route to "flag-up" the need for additional assessment for enhanced telecare and ECS. The group developed a draft addendum to the SSA that included a brief telecare assessment; this has now been incorporated into the electronic SSA.

For the purposes of the Urybank Sheltered Housing Scheme the SSA held by the tenants was used as the starting point for the assessment of need for enhanced telecare. The information provided by the SSA was supplemented by discussion with the tenants, their families, Care Managers, Home Care Supervisors, Occupational Therapists, formal carers and SHOs. Discussion with tenants and their informal carers focussed on lifestyle, use of environment, functional and cognitive skills, hopes and aspirations. Within this context types of equipment, their function and capacity, the potential impact this would have on individuals' lives and the remit of the project were discussed with the potential users.

The standard call-system utilised by Urybank Sheltered Housing Scheme was an old system that was incompatible with any enhanced equipment being considered for tenants, therefore dispersed alarm systems were installed to overcome this problem. Dispersed alarm systems from two different service providers (Tunstall and Tynetec) were installed, with a variety of individually assessed peripherals including falls detectors, bed sensors and vibrating pillow alerts. Two tenants had a previous history of flooding their flats and as a preventative measure Magiplugs were fitted to their kitchen sinks, where the higher risk was identified.

The Community based project mainly depended on initial visits with the professional making the referral, in the first instance, with follow-up visits generally being carried out by the project officer and, where required, the engineer. Some occupational therapy staff were keen to attend follow-up visits, describing this of value to their development and practice. Care Managers and Home Care Supervisors were less inclined to attend follow-up visits; this may be reflective of their current role -

"… the Care Manager's role is one of identifying need and purchasing…once a provider is identified the meeting of need becomes the provider's responsibility…I think they (Care Managers) possibly view your role as the provider." (Strategic Planning Officer)

In 1 case, of the 36 referrals, the assessment was only carried out by the Homecare Supervisor, who indicated reluctance at further assessment due to the condition of the user's home. Following discussion equipment and installation was provided by the project, without further involvement of the project officer and inclusion in the evaluation process.

Where ECS was assessed as being required, to enable the tenant to access their telecare, a follow-up assessment was arranged with the engineer for the ECS service provider. As with the telecare equipment two service providers were identified (Possum and RSL Steeper). The engineers carried out a site survey and provided tenants with an opportunity to try equipment in their home environment. As part of this assessment process switch systems were considered, in conjunction with appropriate operating equipment.

Comment

Current assessment processes for community alarm may require to be reviewed in order to enable integration of enhanced telecare/ECS and monitoring into care management procedures. The preferable long-term goal is inclusion of assessment processes into the SSA. As the process of change in practice, to incorporate technological options into support provision, requires effective change management the planning process requires appropriate support networks and phasing plans to be established.

In the short term, trigger questions included in the Single Shared Assessment need to flag up need for additional telecare/ECS assessment, with a clear pathway of response being determined.

Phase 2 of the Project requires determining procedures and protocols relating to the assessment processes, including development of an interim plan, ensuring that referrals are appropriately managed whilst encouraging front-line staff to develop skills to manage future assessments.

This should include the identification of local champions to support frontline staff to develop the additional skills required to assess functional, social, environmental and cognitive needs of service users and their carers when considering technology as an option in meeting user need.

As part of the process of developing procedures and protocols consideration requires to be given to processes for assessment of complex needs, where installation of ECS is required. Such assessments may continue to have a specialist element given the complexity of the equipment and switch systems required for individual users.

Ordering

Agreement at the onset of the project was to use the NHS PASA route for ordering equipment. The PASA on-line catalogue provides for a nationally agreed pricelist for approved suppliers and equipment. Theoretically this route provides many advantages for commissioning partnerships. Early in the project a number of difficulties with this route have been identified, including:

- Not all equipment or emerging providers are included in the catalogue, although this is being regularly reviewed;
- Some equipment could be ordered in bulk via a third source at a lower cost than indicated on PASA, passing this saving onto the partnership if ordered through them;
- Discounts were available on some larger cost items ordered, resulting in additional savings for the partnership.

Thus it has been essential to be aware of the limitations of the PASA catalogue and establish close working relationships with providers, enabling negotiation for cost effective packages.

The time between placing an order to point of delivery varied. Tunstall equipment was usually delivered within 1 week of ordering. Tynetec equipment was ordered through the installation company, Goldshield Electronic Security, due to the lower prices obtained as a result of their bulk purchase system. Delivery was variable from 2-6 weeks. ECS equipment ordered through RSL Steeper and Possum was delivered in 2-8 weeks dependent on the type of equipment ordered.

As a result of the time delay in obtaining equipment a decision was made to store small amounts of essential telecare equipment e.g. Lifeline Connect+ with Amie or Gem pendants, Smoke Detectors, Falls, Detectors and Bed Sensors for both Tunstall and Tynetec. As this stock has been used, replacements have been ordered, thus ensuring ready access.

Comment

During the lifetime of the project ordering and supply of equipment has been generally completed on a person centred, individualised basis. Prescriptive supply of equipment is inappropriate to meeting of individualised needs, and may result in inappropriate installations which fail to target areas of high need and result in additional expense. Bespoke packages, which target needs, provide for more effective service provision and may be amended through review processes, as user need changes.

As part of Phase 1 of the project initial attempts to use PASA e-catalogue for procurement were curtailed by the limitations of the catalogue. Thus procurement was achieved through a mixture of PASA and individualised ordering, according to user need.

This is a less than ideal method of procurement and systems require to be established to ensure more effective and efficient methods enabling more timely delivery and instalment. However, such methods require being flexible and ensure that best value is retained. Key to development of such systems is integration with storage and tracking, ensuring appropriate re-cycling of equipment whilst maintaining proactive relationships with suppliers.

Telecare requires becoming an integral part of general procurement of social and health care response to need. In order to avoid telecare remaining on the periphery of the process of procurement, it requires to be mainstreamed through inclusion in all purchasing actions.

Development of additional partnerships require reviewing, with regard to specific aspects of procurement e.g. Grampian Fire and Rescue Service supply and install smoke detectors. Such partnerships would benefit users requiring specific equipment to link into existing telecare.

Relationships with Suppliers

Throughout the lifetime of the pilot project a number of suppliers have been either contacted, or contacted the project, enabling the partnership to explore alternative products and services being offered. This continues to be an important element of telecare, telehealth and related services in a rapidly moving marketplace.

Establishing working relationships with providers has also assisted the process of finding bespoke, effective and economic solutions to individual service user needs. For example, one telecare provider suggested that instead of supplying their own brand of flood detector it may be more beneficial to prevent floods in the first instance through the use of an innovative

plug that includes a pressure release valve and temperature indicator. This replaces existing bath or kitchen sink plugs at the cost of £6 as opposed to a minimum of £35 for an electronic flood detector that sends out an alert following a flood. Two telecare providers have indicated a willingness to work in partnership to achieve connectivity in relation to a "talking pendant" ensuring that other items of telecare equipment can work alongside this. Another provider has recently sourced a piece of German equipment to work with door openers to meet the requirements of household insurers; ensuring tenants do not breach conditions of their insurance companies.

Comment

Investment in time for research into emerging and new technologies and opportunities to develop working relationships with provider agencies can provide for long-term financial benefits for the partnership. Within strategic development and operational roles a specific remit, enabling identified staff to have some focus on developing a specialist knowledge base which feeds into procurement processes, would be clearly beneficial to ongoing development of creative response to service user need.

Installation

The installation process was monitored and followed up by the project officer, with method of installation being slightly variable according to the provider. Tunstall, Possum and RSL Steeper provide and install their own equipment. However arrangements for installation of Tunstall equipment, the provider in the Aberdeenshire area for mainstream community alarms, was usually made through the RCC technicians, who are trained to install and support Tunstall users. The RCC technicians are employed through Aberdeen City Council; therefore their services were purchased to support Aberdeenshire users through the project. This provided a timely response to individual need, with installations occurring on average within one week of request. An emergency service was available if installations were required within 48 hours.

Possum and RSL Steeper equipment, throughout the project, has been installed by the provider's engineers. The engineers were all involved in the assessment process and in the main developed a positive working relationship with the users at this early stage. Currently 3 engineers from the 2 companies cover Scotland and fortunately there appears to be a low turnover in staff, allowing for a positive relationship to be developed between user and engineer.

Tynetec do not install their own equipment but provide purchasers with a list of approved engineers, who have been trained by Tynetec to install their equipment. Goldshield Electronic Security is a Tynetec approved installer, with a history of working in Aberdeenshire installing telecare and related electronic technology.

Achieving timely installation, particularly for ECS and more unusual combinations of technology, has not always been possible. In discussion with provider companies/installers, the difficulties indicated have been primarily due to:

- Time delays in obtaining parts
- Pressure of work being experienced by installers
- Connectivity of new equipment with existing equipment

With many partnerships nationally being in a position at the same time to purchase and install equipment within a specific time frame, telecare providers have indicated that there has been resulting pressure not only in supply of some equipment but also, more particularly, in the scheduling of installations. This was particularly noticeable during the period August – December 2007, with the time between purchasing equipment and installation being up to 10 weeks. Since February 2008 the time gap between ordering and installation has decreased to around 6-8 weeks. In discussion with providers there is a belief that more trained engineers would possibly assist the short term problems; however there is not a long-term need, therefore no additional recruitment has been undertaken.

There have also been some difficulties with installation of new equipment and its incompatibility with older baseline equipment already installed. Some providers take the approach of a more flexible use of equipment to solve connectivity issues, for example, recycling equipment where practical.

At this point in time there are no maintenance contracts in place for equipment installed as part of the telecare project. There has been some dialogue, as part of the ongoing discussions with suppliers/installers, regarding ongoing equipment maintenance needs. This has resulted in initial discussions with a number of equipment suppliers and Aberdeen City Council regarding the potential of localised maintenance being provided through the RCC (Regional Communication Centre) technicians, with the telecare providers providing training to enable repair and maintenance of equipment across the Council area, following installation. Issues, linked to ongoing purchasing and maintenance, require further work, including discussion with MARS (Mobility and Rehabilitation Services) regarding roles in relation to budgets, assessments and storage. MARS provides assessment and provision of wheelchair, prosthetics and related technology to mobilise and aid users to be independent. Currently MARS has a small budget available for provision of environmental controls and maintenance. During the course of the Project all Aberdeenshire users known to be on the MARS waiting list for assessment for ECS have been assessed and provided with equipment through the telecare budget.

Comment

It is essential to develop proactive relationships with suppliers who install equipment, developing timely response to need and ensuring they understand the specific requirements of the partnership and users. In Phase 1 of the Project this task has fallen to the Project Manager, resulting in considerable time being spent on administrative aspects of the task. In the longer term these tasks require to be integrated into mainstreamed service provision. This may ideally fall within the Joint OT Store remit, where tracking, storage and centralised relationships may be more easily maintained. In the short-term administrative support being provided to the Project officer would enable ordering, installation and post-installation support to be appropriately managed.

Throughout Phase 1 of the Project suppliers have provided varied methods of installation and maintenance. This would ideally be more streamlined in Phase 2 of the Project. Tasks remaining to be addressed are:

- Developing a localised skills base for minor installations and maintenance of Tynetec equipment in conjunction with Aberdeen City Council and RCC technicians;
- Negotiation with MARS regarding installation and maintenance of ECS as part of a pan-Grampian agreement.

Storage

At the onset of the project no consideration had been given to potential storage issues for new or re-cycled equipment. Aberdeenshire Council currently does not have a centrally based Occupational Therapy (OT) store. The dispersed stores do not have spare capacity for storage of telecare or telecare related equipment at this time.

Some telecare equipment purchased through the earlier telecare pilot was stored in a box in one of the OT stores. On examination the equipment had generally been poorly de-commissioned, resulting in broken and poorly maintained apparatus, whilst other pieces were old and obsolete. The lack of a pre-agreed system for de-commissioning, maintenance and storage resulted in an undesirable level of wastage. Furthermore the lack of logging and tracking of previously ordered equipment had resulted in lack of knowledge of where equipment had been placed, when it was decommissioned and exactly what pieces were stored for future use. A number of individualised packages of ECS were in circulation around Aberdeenshire, with individual OT's being aware of their existence. However, as with telecare equipment there was no centralised record held of what type of equipment and who the user was.

During the course of the pilot project a number of requests were made of the project officer to arrange de-commissioning of pre-existing telecare and ECS. This was not the remit of the project, although advice was given to front-line staff on how to proceed with decommissioning. This highlighted the need for sound, centralised systems for the storage and maintenance processes.

A small amount of storage space was established within Flat 10, Urybank Sheltered Housing Scheme, which remains the current central storage point for the small amount of equipment kept in stock.

Aberdeenshire Council is currently planning a joint OT Store, based in Inverurie. It is anticipated that this facility will become available in 2009. Discussion with the Project Manager for this development has taken place, ensuring that there will be some future capacity for storage of new and re-cycled telecare, ECS and related equipment.

Comment

In line with the storage capacity further consideration needs to be given to:

- Procurement and contracting methods – some providers offer storage provision, which may be of benefit for larger items, however consideration requires to be given to the potential additional costs that may be incurred by taking this route.
- Logging and tracking of equipment – previous use of technology has not been accurately logged or tracked. To enable appropriate re-cycling and resource management the logging would ideally fit with systems currently being adopted for maintenance of general OT equipment.
- De-commissioning and decontamination – systems enabling recycling of equipment require to be developed, ensuring effective and efficient use of all technology purchased by the Partnership.

Stonehaven Telehealth Project

During the summer of 2007 the application of telehealth equipment was also explored, in conjunction with NHS Grampian. This led to a decision to pilot the use of single user and multi-user equipment through the Stonehaven Medical Practice.

A 6 month pilot project, utilising equipment leased from TeleMedCare was due to start in April 2008. The intention was that NHS Grampian would take the lead role in this element of the project, with RGU and Aberdeenshire Council facilitating and providing ongoing support, in conjunction with Scottish Centre for Telehealth.

The intention of the Aberdeenshire pilot project was to provide funding for the lease of equipment, which includes three single user units and two multi-user units. One of the multi-user units was to be hosted at Mowat Court Care Home, whilst the other was to be based at the Stonehaven Surgery, enabling patients to utilise the equipment at a time that best suits their individual needs without appointment with a health care professional.

The aim of the project was to enable a reduction in unplanned admissions, targeting patients with Chronic Obstructive Pulmonary Disorder or other long term conditions, who have a history of high level medical intervention. The inclusion of the equipment in the patients programme of care would encourage the patients to become actively involved in self care and assist them and the medical professionals to identify any deterioration at an earlier stage than through traditional interventions.

The equipment being sited at Mowat Court would also have the additional role of monitoring the use of prescribed medication within a residential care setting.

Whilst the equipment was installed in April 2008, it has still to be become operational. Delays are primarily due to:

- Connectivity difficulties
- Lack of clarity regarding aims and objectives
- Lack of clarity regarding roles and responsibilities.

Comment

Whilst the partnerships long-term goal continues to focus on the health and well-being of users in the community, actively seeking to provide a spectrum of telecare and Telehealth response to individual need, which enables them to remain at home and in control of their lives, the promotion of Telehealth through local GP practices, at this stage, should be reviewed. The role of the telecare project may only be that of facilitator, due to the remit of the telecare project and the clinical requirements of a Telehealth project. The aims and objectives of this element of the project have remained elusive and issues of leadership and ownership remain unresolved.

Should the Telehealth Project continue into Phase 2 of the Telecare Project, it is essential to establish clarity in the relationship between the two Projects, including defined roles and boundaries. The Scottish Centre for Telehealth would be ideally suited to act as intermediary between both Projects.

Intermediate Care Project (Flat 10)

In 2006 the Insch Rehabilitation Project Group proposed a model of intermediate care provision, in a community setting. The model proposed was based around the provision of an intermediate/rehabilitation service based in 4 sheltered housing units, providing a service for the population of the Central Aberdeenshire area. The intended target population were patients who required AHP, nursing and carer support for a period of up to 12 weeks, to enable them to return home or to a more appropriate setting such as a sheltered housing scheme. The main aim of this service was to reduce the difficulties being experienced with delayed discharges being encountered in Inverurie.

By using a sheltered housing scheme, as the focal point for such a service it was anticipated that users would move towards achieving a higher level of independence in a home based environment, with targeted support and rehabilitation, prior to returning to their own home. It was believed that the users of such a service would benefit from the social interaction open to them within the sheltered housing scheme.

Due to a number of factors this model did not become an operational reality in 2006. However the proposal was re-visited, as part of the telecare pilot project. Members of the telecare partnership and a wider group of professionals, and health and social work managers met to discuss the concept of Intermediate Care in July 2007, with a senior health manager subsequently agreeing to prepare a discussion document for a subsequent meeting in August 2007. From the initial meeting a core group was established, the Intermediate Care Group, to forward any proposals.

A proposed model was agreed in September 2007, with support being obtained from Aberdeenshire Older People's Management Team, Supporting People, and the local authority, with a property being identified at Urybank Sheltered Housing Scheme (Flat 10). It was agreed that health would take the lead role, with the telecare project providing advice and support in relation to telecare, related technology and environmental design.

Flat 10 was a former Warden's flat, offering substantial accommodation, which could accommodate up to three users at any one time. The kitchen in the flat was modernised, the accommodation redecorated and furnished to appropriately meet the needs of users, with a variety of needs. Telecare and ECS was installed, on the basis of varying needs, with a small stock of enhanced telecare equipment kept in stock to enable potential users to be able to go home with appropriate equipment being readily installed.

As with the original proposal made by the Insch Rehabilitation Project Group the Flat 10 project did not become operational for a number of reasons. Discussion between health and social work remains ongoing regarding the future of this project.

In the meantime the telecare project has been utilising Flat 10 as a training resource and store for equipment. Staff from health and social work have additionally been using Flat 10 as a resource for assessment, bringing potential users to try out non technology based equipment as well as elements of telecare. Availability of this resource, in the interim, has enabled 1:1 and small group training, using pre-installed equipment for demonstration purposes.

Comment

In the interim period Flat 10 should continue to be utilised as a training and storage facility, enabling the resource to be of continued value, pending a decision on future use. As part of the consideration for future use, Flat 10 would be of medium to long-term value to a variety of stakeholders for training and assessment. This may be an appropriate base for the Telecare Project staff, enabling potential users and staff access to an equipped facility, where options for users may be viewed, tried out and alternatives discussed with the Project Officer.

Advice and Support

Throughout the project advice relating to individual service users needs, potential solutions, and installations, has been provided to social work and health staff, on request. Advice has also been provided to service users and informal carers, either through direct contact or by referral from professional staff. On occasion advice has led to the provision of non-telecare equipment, provided by the telecare project as a preventative measure. Such equipment has primarily been Magiplugs, for the avoidance of flooding, or Night Lights with a Passive Infrared capacity to prevent falling when someone gets up during the night. Both pieces of equipment have been reported by carers and users as being effective in resolving low level problems.

Support at pre-installation and post-installation stage was given to service users, carers and professional staff. For staff this included discussion relating to telecare and ECS solutions to need, impact on care planning, protocols and procedure and review processes. Service users and carers were provided with opportunity for post-installation discussion through one home visit and opportunity to contact the project officer by telephone, should they wish.

A small number of users and carers requested additional post-installation visits due to:

- Difficulties in understanding aspects of their equipment;
- Desire to have additional features of their equipment activated;
- Breakdown of equipment.

Social Care providers have also approached the project for advice and input. Real Life Options (RLO) requested assistance to review overnight staffing structures in one service where there had been 3 sleepover staff to support 9 tenants, within close proximity. With the support of the multi-disciplinary community learning disability team, appropriate telecare has been installed, reducing the overnight staffing by one in the short-term and working towards a further reduction in the medium to long-term. RLO and the multi-disciplinary team have subsequently requested further assistance to identify additional environmental controls/monitors for one tenant and staff training. These will permit a shift from an intensive all-day support package, provided on a one-to-one basis, to a housing support-focussed package, provided through planned care intervention, backed up by a response service.

Comment

Provision of support and advice is an ongoing requirement of the Project. As frontline staff gain knowledge and confidence the level of input may decrease, with respect of telecare equipment, however in the short to medium-term there needs to be capacity to respond to this need. The provision of ECS, to enable access to telecare equipment, does require some specialist assessment and installation knowledge. Therefore in the medium to long term the partnership needs to address where this knowledge base sits within the operational setting.

Training

A number of activities were undertaken during the period May 2007 to June 2008 (see Figure 13), aimed at providing basic telecare awareness training and project overview to more intensive training aimed at operational staff supporting users with enhanced telecare and ECS. Most requests for training were generally made from staff groups, however one ½ day event was organised in conjunction with the Scottish Centre for Telehealth and the Telecare Project and two further conference events occurred as a result of external organisations requesting input from the project.

The training provided was generally targeted specifically to the group's needs, although providing for the following basic elements:

- Overview of telecare and related technology
- Use of the technology – including myths and reality
- Aims of the TDP
- Aims of the Aberdeenshire Telecare Project
- Making referrals and contact details

Two staff groups were provided with additional training to enable them to provide support for service users, informal carers and colleagues. Content of these courses included:

- Telecare Awareness (as outlined above)
- Including Technology in Practice
- Protocols and Procedures
- Risk Assessments and Support Planning
- Evaluation and Review Processes

Following telecare awareness events, particularly following the extension of the telecare project to include Community based services users, there was an increase in interest regarding the use of telecare. This was indicated through an increase in seeking of advice and referrals.

Comment

Training and communication needs to continue to be part of an ongoing programme within Phase 2 of the Project. Production of alternative training and communication material such as leaflets and newsletters were produced during the Project and have assisted in promoting telecare amongst staff, users and carers. Continued use of such materials would be part of an effective programme of communication with stakeholders across the Partnership.

A considerable number of staff have attended telecare awareness training, either through their team meetings or pre-arranged sessions, conferences and seminars. During Phase 2 such awareness training needs to continue, alongside regular refresher sessions, ensuring that telecare and its impact on user's lives is promoted.

Figure 13 - Telecare Training Overview

Month	Types of Event	Staff Group	No. of Attendees
May 2007	Telecare Awareness x 2	1xCare Management 1x Health & Social Work	17
Jun 2007	Telecare Awareness x 1 Telecare & Telehealth Awareness & Demonstrations x 1	2x Health & Social Work	92
Jul 2007	Telecare Awareness	Health & Social Work	40
Aug 2007	Telecare Awareness and Demonstrations x 3	Health & Social Work Staff, Users & Carers	50
Sep 2007			0
Oct 2007	Telecare Awareness x 2 Telecare Awareness and Demonstrations x 1	Health & Social Work x 2 Social Work & Providers x 1	62
Nov 2007	Telecare Awareness x 1 Telecare Awareness and Application to Practice x 1	Social Work x 2	30
Dec 2007			0
Jan 2008	RGU Seminar	Academics	12
Feb 2008			0
Mar 2008	Telecare Awareness x 2 3rd Year OT Students x 1	Social Work x 2 RGU students	58
Apr 2008	Telecare Awareness x 2	Social Work	15
May 2008	Telecare Awareness x 3	Social Work x 1 Health & Social Work x 2	68
Jun 2008	Telecare Awareness x 2	Social Work x 1 Health & Social Work x 1	32
Jul 2008	Telecare Awareness and Application to Practice x 1	Service Provider and Health Professionals	10
TOTAL			**486**

Finance

The Aberdeenshire Partnership was granted £316,248 in total from the TDP for the period 2006-07 and 2007-08. Payments were received in May and July 2007 and March 2008, with funding being spent on two principal elements of the project including:

- Payment to RGU – Projects Officer
- Purchase and installation of Telecare

The initial payment to Aberdeenshire Council was received in May 2007, for the year 2006-07. Delays in establishing the project due to the delay in the TDP being rolled out across Scotland did constrain the initial development of the project, including expenditure on telecare equipment. This has resulted in a compressed programme, which has not comfortably accommodated delays experienced through engagement, planning and commissioning, installation and evaluation processes.

Given these constraints expenditure across the programme consists of:

Figure 14 - Financial Statement at end June 2008

Costs	Expenditure (£)
Payments to RGU	97,065
Telecare Equipment and Installation	85,198.46
Total	**172,263.46**
Carryover	**133,984.54**

At the onset of the project the Partnership agreed a number of targets for the project, linked to: potential savings in hospital admissions and discharges; admission to residential care; as well as identifying benefits for users and carers. During the course of the project there has been a partial review of these targets, as additional opportunities arose, providing benefits in relation to reduction in sleepover provision. Targets were established in line with those endorsed by the Scottish Government.

Figure 15 - Targets and Benefits of Phase 1 Telecare Project

	Target at Onset of Project	2007-08	April-June 2008	Financial Savings £
Hospital days saved	42	23	48	23,190
Reduction in delayed discharges from hospital	3	0	2	
Reduction in unplanned hospital admissions	23	2	4	
Reduction in care home admission	7	5	3	
Reduction in care home days	252	110	410	301,600
Reduction in nights sleepover	Not set	26	91	4,259.97
No. of persons able to maintain self at home (with support)	18	28	6	
No. of carers supported	Not set	9	13	
TOTAL				**329,049.97**

Measurement of targets, due to hospital admissions, were informed by data from NHS Grampian, however collation of data at a local level did not fully reflect the targets provided to the Joint Improvement Team, creating difficulties in measuring financial savings, particularly those linked to reduction in delayed discharges from hospital and reduction in unplanned admissions to hospital. Information that could be identified is shown in Figure 15. Methods of collecting and measuring these targets have been re-defined for April-June 2008 and should more clearly demonstrate financial benefits in 2008-09.

During Phase 1 of the project a small financial saving was demonstrated primarily through reduction of care home admissions, using telecare and related technology to continue to support users at home. Professional assessment indicated that users concerned were being assessed as requiring residential or nursing home support. In one service, reduction of one sleepover worker was achieved by provision of telecare and related technologies to five tenants, with a view to reduce this further later in 2008.

From March to June the financial benefits may appear small but this element of the project evidences the potential value of telecare for core and cluster style learning disability services. Savings on hospital day beds saved resulted from early discharge for users who had telecare in place prior to discharge from hospital, ensuring appropriate risk management and aids to independence were in place to support users at home.

Evaluation of the Aberdeenshire Telecare Project

User and Carer Evaluation

Consolidated Benefits

In total 48 service users, in Urybank and the Community based project, received enhanced telecare equipment, with or without ECS, as part of the pilot project. Separate from the project Aberdeenshire Council continued their normal programme of provision of Community Alarms, where assessed as appropriate. For those included in the project reasons for provision were varied (see Figure 16) 48% being provided initially for minimisation of risk and 35% to promote independence. However behind the initial reason for referral and provision there were generally one or more secondary benefits, with potential long-term benefits being perceived by professionals as well as users and carers. In the vast majority of cases carer support was viewed as an essential benefit and in 2 cases was seen as the principal benefit with professionals citing that had equipment not been provided there was a high risk of the user requiring residential care in the short to medium term.

Whilst the cost benefits demonstrated in Figure 15 may be deemed tangible, there are the less evident benefits demonstrated through mitigation of risk, promotion of independence and carer support. It is difficult to fully quantify such benefits, although anecdotal evidence obtained through questionnaires and interviews, as seen below, demonstrate the potential savings in the above three categories. For some service users and carers the ability to choose not to have formal care or go into residential care has been a powerful benefit of receiving telecare.

"I have been able to keep my promise to Mum and keep her at home– it allows Mum to be on her own for short periods of time and I know I will be alerted if anything happens – it gives me peace of mind and you can't put a price on that" (Carer)

"I like everything about my new equipment. I am more independent and can do things when I want to do them!" (Service User)

Urybank Sheltered Housing Scheme

Data relating to service provision pre installation at Urybank Sheltered Housing Scheme was collected between September and December 2007 (see Figure 17). Installation of equipment started in late October 2007 and was subject to a number of delays. Installation was not completed in full until April 2008.

Of the 22 service users assessed the decision was made to provide enhanced telecare, environmental controls and monitors for 15 service users. Shortly following installation, 1 service user's health deteriorated, subsequently resulting in admission to residential care, therefore initial data collected for this user was discounted.

All service users, in this phase of the pilot project, accessed support from a Sheltered Housing Officer based within the scheme from 9am to 5pm each day and an on-call service provided on site from 5pm to 9am, provided by Aberdeenshire Home Care Service. In addition many service users accessed additional care/ support provision through a variety of statutory, private and informal provision (see Figure 17).

In the first quarter of monitoring service provision at Urybank Sheltered Housing Scheme, 4 service users were subject of emergency hospital admission, with 1 tenant not returning home. 1 service user (Tenant 4) returned home aided by the installation of telecare with 2 service users returning home regardless of telecare input.

During the second quarter installation continued through the period December 2007 to March 2008. Data recorded during this period identified some changes within response and support needs of service users (see Figure 18). Following admission to hospital there has been a notable increase in >10 minute interventions for tenants 2, 4 and 10. On further analysis this reflects a need for 2 carers to assist in the provision of personal care, enabling tenants to remain at home.

Figure 16 - Reasons for Receiving Enhanced Telecare Equipment

	Main reason for receiving telecare	Secondary reason for receiving telecare equipment	Main longer-term anticipated benefit from telecare
Minimise client risk	23	22	11
Promote client independence	17	30	10
Prevent long-term admission to residential care	4	2	20
Prevent/reduce unplanned admission to hospital		2	
Facilitate hospital discharge	2		
Monitor client to assess longer-term needs		4	5
Intermediate care			
Carer support	2	36	2

Figure 17 - Urybank Responder Data 14th Sept-14th December 2007

Tenant	Homecare Provision	Other Support Provision	Hospital Admissions	Alerts	False Alerts	* Reassurance	** <10 mins	*** >10mins	Other
1	1½ hours pw	Private housework support		61	1	2	46	12	
2	10 hours pw of which 8½ hours requires 2 carers	Private housework support	4 days	57			4	52	1
3	All care provided by wife.			8		3	4	1	
4	8 hours per week of which 7¼ hours requires 2 carers	Husband provides all other support	17 days	54	25	6	2	21	
5	No care package			13		7	3	3	
6	No care package			6	2	3		1	
7	No care package	Partner provides care		1		1			
8	No care package	50 hours per week care and support		2		1	1		
9	7¼ hours pw	Day care		43		16	22	5	
10	17¼ hours pw	16 year old Daughter provides informal care	7 days	35		12	10	10	3
11	No care package			1		1			
12 & 13	No care package			0					
14	No care package			2	1			1	
TOTAL				**283**	**29**	**52**	**92**	**106**	**4**

** Reassurance – verbal contact with responder via telephone or intercom system and no visit required to service user's tenancy*
*** <10 mins – visit to service user's property by the responder, where that visit lasted less than 10 minutes, indicating low level intervention.*
**** >10 mins – visit to service user's property where the visit lasted more than 10 minutes, indicating more complex response by responder.*

Figure 18 - Urybank Responder Data 14th Dec 2007-14th March 2008

Tenant	Hospital Admissions	Alerts	False Alerts	Reassurance	<10 mins	>10mins	Other
1**		78	1	6	62	7	
2*		64			5	59	
3*		6	1	1	1	3	
4*	18 days	69	22		13	33	1
5*		7		2	2	1	2
6*		7	1	3	3		
7*		4			3	1	
8		22	16		2	4	
9		61	5	18	30	18	
10*		70	4	6	6	58	
11		1	1				
12 & 13		1	1				
14		7		1		1	5
TOTAL		**397**	**52**	**37**	**127**	**185**	**8**

* Indicates partial installation of telecare. ** Indicates installation to be undertaken

Additional analysis of false alerts highlighted the need for re-assessment of switch systems for tenant 4 and in the case of tenant 8 highlighted an unusual problem of the service user's carer deciding to re-wire the telecare causing the system to become defective. On a positive note, following the provision of enhanced telecare/ partial enhanced telecare there has been a notable reduction in reassurance alerts (19.24%).

However, the data obtained in the final quarter of the project did not provide conclusive evidence of any shift in the pattern of support provision within the tenant group at Urybank (see Figures 19 and 20). It did evidence users were using the system installed and in general the false alerts were decreasing, which may be an indicator of increased confidence in the systems.

On further analysis of the six tenants with the highest level of alerts a number of life changes and potential reasons behind the patterns were identified as having potential impact on the alert status. Discussion occurred with tenants and carers to try and establish possible reasons for varying patterns. All tenants had received enhanced telecare packages including ECS.

During the 2nd and 3rd quarters of the pilot project Tenant 1 (see Figure 21) showed an increase in alerts. Full installation of Tenant 1's equipment occurred during the initial part of the 3rd quarter. Following installation there appears to have been a small drop in <10 minute interventions, however those rose sharply in the 2nd quarter. It would therefore appear that the inclusion of technology had an impact on Tenant 1's level of care needs.

Figure 19 - Urybank Responder Data 15th March 2008-14th June 2008

Tenant	Hospital Admissions	Alerts	False Alerts	Reassurance	<10 mins	>10mins	Other
1**		91	1	1	56	28	
2*		25		3	8	14	
3*		10			3	5	2
4*	33days	49	16	5	15	12	
5*	3 days	10		5	1	3	1
6*		1				1	
7*		7		1	4	2	
8		32	6	7	8	11	
9		74	1	17	23	33	
10*		72		8	23	40	1
11		3		2	1		
12 & 13	7 days (13)	1					1
14		23			2	2	19
TOTAL		**398**	**24**	**49**	**144**	**151**	**24**

* Indicates partial installation of telecare. ** Indicates installation to be undertaken

In discussion with Tenant 1 it was established that towards the end of the 2nd quarter her disease process had been exacerbated, resulting in a decision to give up her car. Until this point Tenant 1 had been very independent, going out on a daily basis and having an active social life. Carers reported that Tenant 1 enjoyed the daily social contact that setting off an alert enabled, albeit she set off alerts appropriately to request assistance for various tasks.

Conversely, in the case of Tenant 2 (see Figure 22) there has been a marked drop in alerts, during the 3rd quarter, particularly those that required >10 minute intervention. It was reported during the 1st quarter that Tenant 2 had a hospital admission of 4 days, on discharge requiring additional support for personal care on discharge. In order to obtain appropriate support for personal care Tenant 2's carer set off the alert to request attendance from a 2nd carer to assist with hoisting.

The level of intensity of support remained high throughout the 1st and 2nd quarters of the study, lessening off in the 3rd quarter due to revised care planning and improvement in Tenant 2's general health.

During the final quarter Tenant 2 showed a marked decrease in >10 minute intervention time, although there was a small increase in < 10 minute interventions. Tenant 2's health and general well-being did improve over the period of the pilot project, although the need for low level re-assurance and contact did increase in the final quarter.

Tenant 4 (see Figure 23) demonstrated an initial increase in the 2nd quarter following installation, with a decrease in most areas of alert/response requirement in the final quarter. During the second quarter Tenant 4 experienced deteriorating health, requiring increasing support accounting for > 10 minute interventions. The reduction in the final quarter has been primarily due to a lengthy admission to hospital.

Tenant 8 (see Figure 24) currently has a mixed package of support, including a private care arrangement of up to 3 hours per day. Tenant 8 reported a desire to be as independent as possible and often wishes to turn his carers away if he wishes to be on his own. The telecare and ECS enable Tenant 8 to pre-determine when he accesses his support on a more regular basis, rather than accepting a prescriptive package of support.

During the 2nd quarter Tenant 8 reported a significant number of the false alerts were due to a fault in the system. On further analysis he highlighted an unusual problem of one of his carer's deciding to re-wire the telecare causing the system to become defective resulting in false alerts and requirement for additional attention of >10 minutes. In the final quarter the false alert rate dropped by over 50% and the need for >10 minute attendance decreased by over 60%, being reflective of a more appropriate usage of the system. Tenant 8 reported that he:

"...finds the technology a great help...it gives me a peace of mind"

The situation for Tenant 9 (see Figure 25) remains difficult to analyse due to the complexity of her physical and mental health needs. Tenant 9 indicates a consistent requirement for reassurance and attention from support staff for a variety of reasons, which results from a poor short-term memory. In the 2nd quarter Tenant 9 did have some initial difficulties understanding the technology, resulting in false alerts, however that would appear to be settling in the 3rd quarter, with a significant reduction in false alerts. Staff report that considerable attention is provided for assistance in finding misplaced items e.g. keys, handbag etc. The 15% increase in alerts between the 2nd and 3rd quarters may be reflective of Tenant 9's increased understanding of use of the system, however this case would benefit from collection of further data for analysis in order to fully understand the situation.

Tenant 10 (see Figure 26) was admitted to hospital following a fall, resulting in a fractured femur, at the beginning of the 2nd quarter. She was discharged from hospital after a 10 day admission and required additional personal care requiring 2 staff members for hoisting. Staff reports they are continuing to provide support to ensure that Tenant 10's personal care needs are met as required.

Figure 20 - Urybank Total Alerts September 2007-June 2008

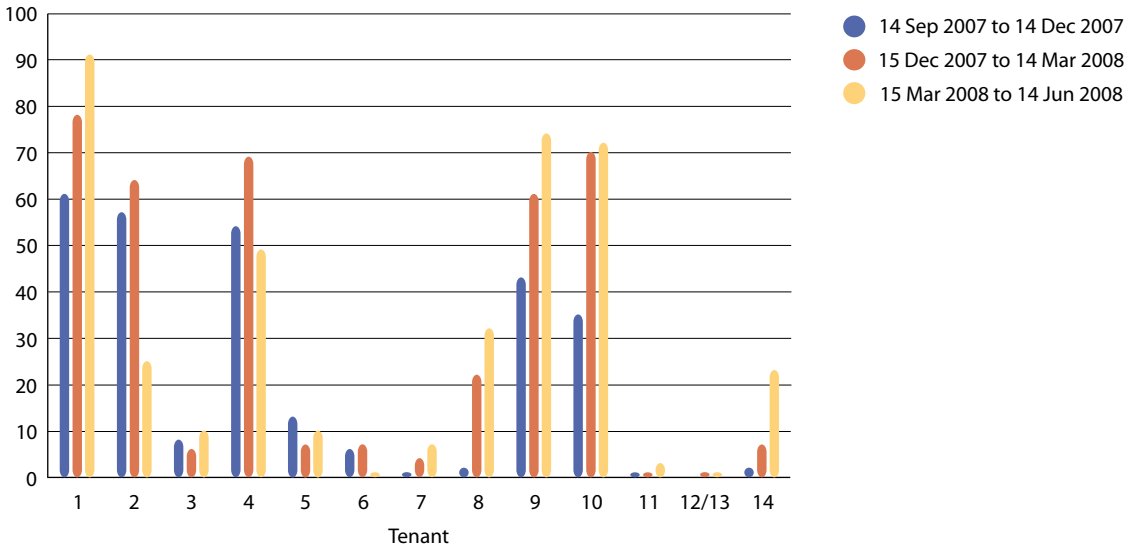


Figure 21 - Tenant 1 Alert Status

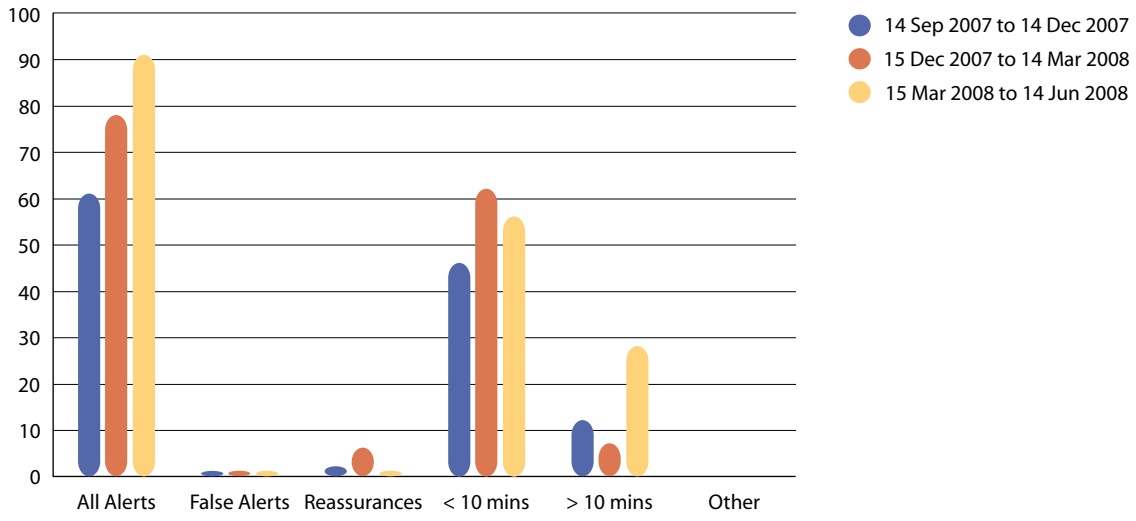


Figure 22 - Tenant 2 Alert Status

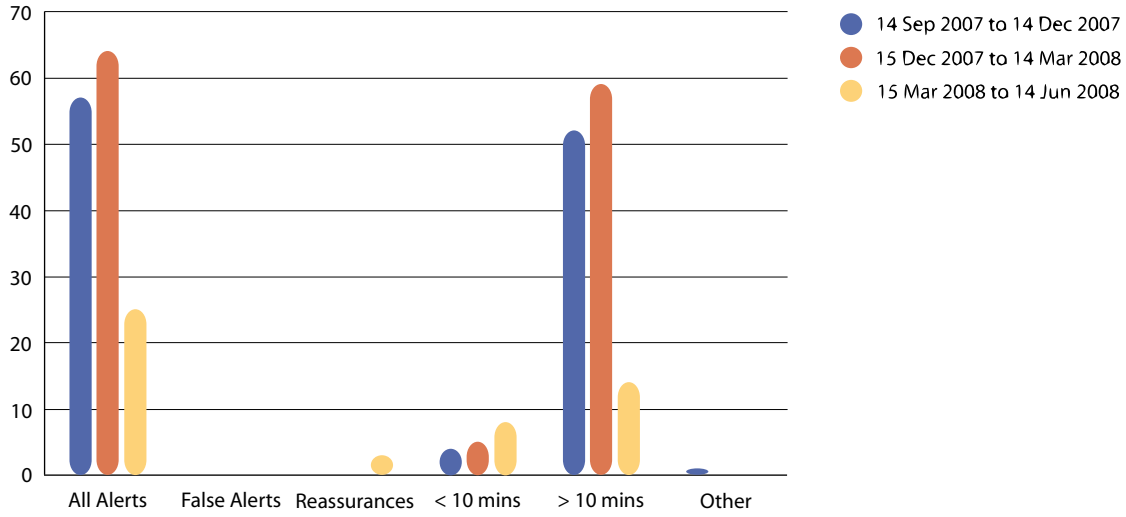


Figure 23 - Tenant 4 Alert Status

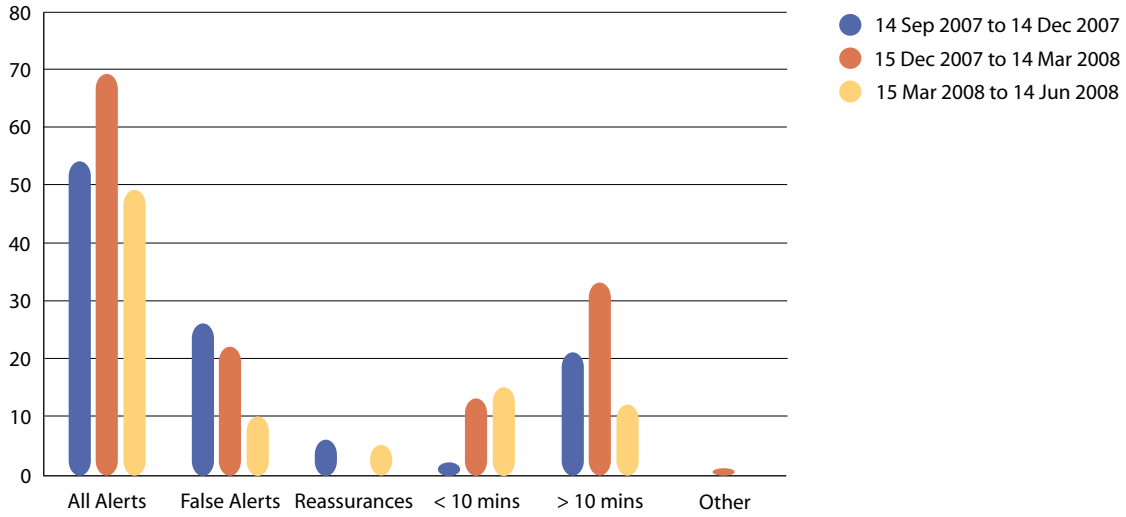


Figure 24 - Tenant 8 Alert Status

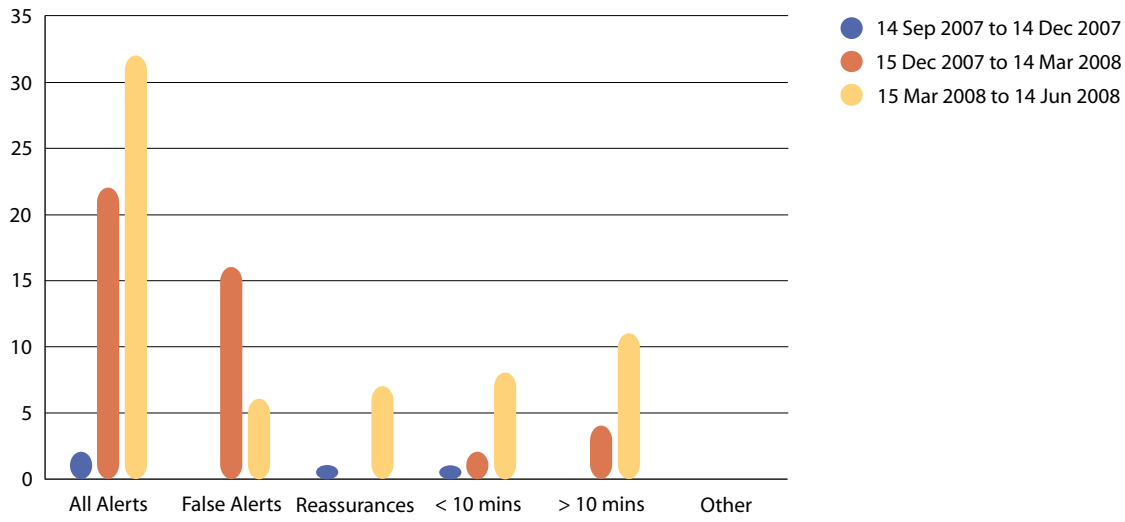


Figure 25 - Tenant 9 Alert Status

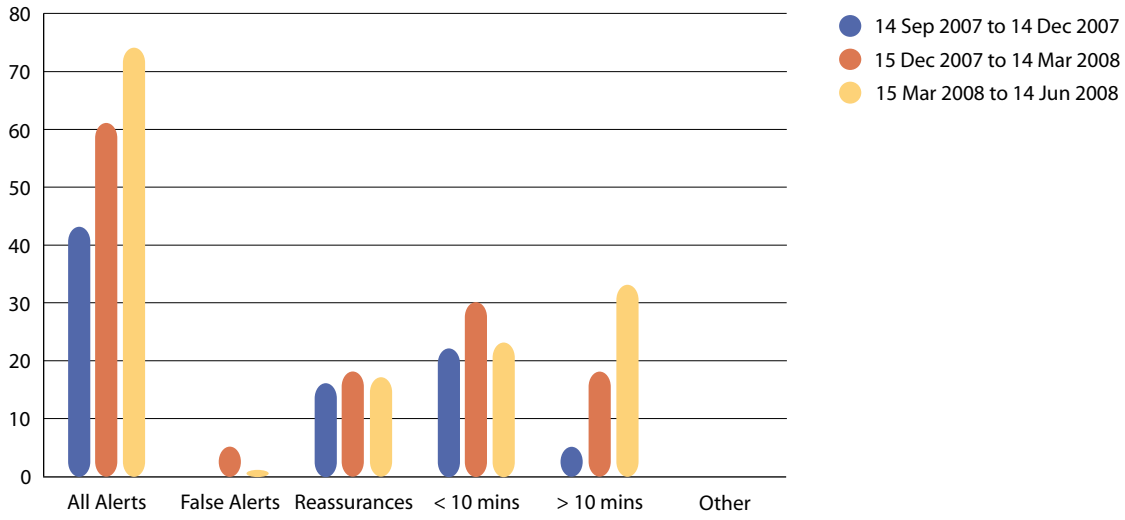
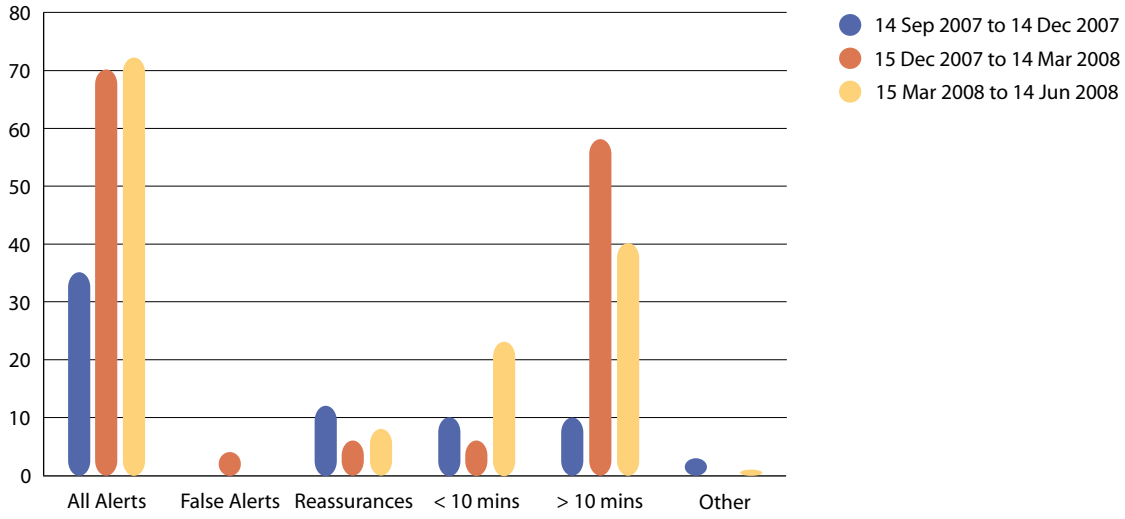


Figure 26 - Tenant 10 Alert Status



It was agreed by the partnership that areas important to the evaluation were:

- Previous experience of home technology and home care technology;
- Benefits obtained from access to telecare and ECS, by users;
- Benefits obtained from access to telecare and ECS, by carers;
- Perceptions of the technology within the living environment.

75% of tenants from Urybank Sheltered Housing Scheme involved in the telecare completed user/carer questionnaires and/or 1:1 interviews. These were completed between 3-6 months following installation.

As indicated in Figure 27, all tenants living in Urybank Sheltered Housing Scheme had experience of operating the pre-existing community alarm system. During the period of the Project two new tenants moved into the scheme, with 1 having previous experience of community alarm and 1 tenant having no prior experience. The tenants provided with enhanced telecare and ECS were aged between 40 years and 89 years, with all having some level of previous experience of home technology and 6 of the 10 who completed questionnaires having access to home computing and the internet. During the course of the Project computing facilities were made available to all tenants in the communal area, with some support being made available from a staff member.

In discussion with tenants there was sound awareness of technology and potential scope to assist within their homes. Three tenants completed their own research into ECS and telecare, resulting in provision of individual "shopping lists" being provided to the Project. Two tenants did indicate concerns regarding the potential use of data obtained from use of systems, particularly downloading of data via the internet:

"I don't trust the internet - I don't think it is secure. You hear all this news about lost data and people getting access to personal information." (Urybank Tenant)

For most tenants there was a feeling that some values were gained from the installations (see Figure 28), however no users believed that telecare had an impact on their health. Similarly no tenant believed that their telecare and/or ECS created loneliness, however this may be reflective of living in an established community setting, where there is a communal area and some organised activities.

The majority of users (80%) indicated that there had been an impact on their general feelings of safety; this was particularly notable for 2 tenants whose front doors faced onto the street and had formerly left their doors unlocked to enable carers' access.

"I like being able to see who is at my front door and choosing whether I let them in or not ." (Urybank tenant)

Figure 27 - User Experience of Home Based Technology

	No Experience	Some Experience	Moderate Experience	Very Experienced
Previous experience of home technology		3 (30%)	5 (50%)	2 (20%)
Telecare Use		1 (10%)	5 (50%)	4 (40%)
Use of ECS	8 (80%)	2 (20%)		

A small number of tenants reported increased anxiety regarding their telecare, this was particularly notable in the first quarter following installation. Both tenants have been re-visited and support provided to ensure familiarisation with equipment. However it needs to be noted that telecare and ECS is not appropriate to all users, this is discussed further under Community Based Users Evaluation.

For 50% of tenants there was reported benefit for carers, with carers feeling less anxious about their loved ones and tenants being able to complete more tasks for themselves. Two carers were interviewed as part of the evaluation process at Urybank Sheltered Housing Scheme. Both carers lived with their partners, providing considerable support. All other carers referred to by tenants at Urybank Sheltered Housing Scheme lived either locally or in nearby towns.

Of the carers interviewed one carer reported:

"The whole experience has been life changing, for both my wife and myself. I can go out now safe in the knowledge that she will be OK; she can get in touch if anything goes wrong and can get help when she needs it." (Urybank Tenant and Carer)

Whilst the other commented:

"He is able to do some things for himself and I feel I can go out and he is safe being left on his own." (Urybank Tenant and Carer)

The aesthetics of the equipment and installation did give some tenants cause for comment, particularly enhanced elements of the telecare equipment and ECS.

"The pull cords and equipment is unsightly. I have personalised my pull cords to make them look better. "(Urybank Tenant and Carer)

"I don't like where they have put the control box (to ECS equipment) it is ugly and everyone who comes into the room can see it." (Urybank Tenant)

Similar issues are discussed below, in relation to some Community Based Service Users.

Figure 28 - Impact of Telecare on Lifestyle

	Strongly Agree	Agree	Neither agree or disagree	Disagree	Strongly Disagree
My health has been better since the telecare equipment was installed			10 (100%)		
I feel safer at home because of my telecare	1 (10%	7 (70%)		2 (20%)	
I feel more independent because of my telecare	1 (10%)	6 (60%)		3 (30%)	
I feel more lonely because of my telecare				8 (80%)	2 (20%)
I feel more anxious because of my telecare		3 (30%)		5 (50%)	2 (20%)
I think my family/carer worry about me less now	1 (10%)	4 (40%)		5 (50%)	
My family/carer need to help to help me less now	2 (20%)	3 (30%)		5 (50%)	

Community Based Project

Obtaining similar diary based data was not feasible for the majority of community based service users; therefore there was sole reliance on questionnaires and individual interviews with users and carers. Data obtained through questionnaires and 1:1 interviews was based on the format used with residents and carers at Urybank Sheltered Housing Scheme.

Whilst telecare and ECS was agreed as appropriate for 29 users, only 8 users completed the evaluation questionnaire, with a further 7 being unable to complete a questionnaire due to capacity difficulties and 2 users declined to complete the form due to ill-health. The remainder of users were excluded from the evaluation, at this time, due to incomplete installations. All users who completed a questionnaire were interviewed. 6 informal carers and 10 formal carers were interviewed as part of the evaluation process and completed questionnaires.

The users involved in completion of questionnaires were aged between 21 years and 87 years. All had some experience with home technology (see Figure 29) and 6 were computer literate, with 5 of those having experience of using the internet and more complex information technology systems. However users had less experience of telecare than their counterparts living in Urybank Sheltered Housing Scheme, with 4 users having no prior experience of community alarm before receiving telecare through the project.

At the onset of the project formal carers were concerned about the capacity of users to effectively use the equipment being provided, citing concerns about perceived complexity of operation and lack of user and carers understanding of technology. As indicated above this does not appear to be a significant issue for users, who appear to have at least a basic grasp of home technology and the majority having a good grasp, which would support an understanding of the operation of telecare and associated technologies. The anxieties of formal carers, as previously noted, can be high and this is reflected in their comments relating to users skill base:

"The equipment is a waste of money, A. does not use it properly and she does not like it" (Homecarer)

In the same case the informal carer informed:

"It (the telecare and ECS) is great, my wife can do so much more for herself and I know she can call me if she needs help" (Carer)

It is essential that in the process of assessment and service provision that telecare is more appropriately integrated into the support planning and day to day practical support.

Staff and carers need to feel confident in supporting users to access and utilise equipment, ensuring proactive integration into the user's daily life. It is equally important that users 'existing skills base is recognized and built on, formal and informal carers ensuring enablement rather than creation of dependency. The change process being brought about by telecare in practice has significant implications for carers as well as professionals.

Figure 29 - Community Users Experience of Home Based Technology

	No Experience	Some Experience	Moderate Experience	Very Experienced
Previous experience of home technology		2	1	5
Telecare Use	4	1		2
Use of ECS	7			1

Two service users reported increased anxieties and disappointment as a result of installations of telecare and ECS.

The impact on users and carers was generally reported as being beneficial, with some of the most noticeable changes occurring for users with limited speech and physical movement, due to long-term and degenerative conditions –

"…I just wanted to let you know how over the moon J and his carer are with his new system. He is absolutely ecstatic – even phoning his granddad and his cousin. I have never, in 9 years, seen his carer looking so relaxed! She can now watch TV in the living-room in the evening while J is in full control of his own life. Neither of them know how they managed without it." (Occupational Therapist)

For users of telecare there were some changes in lifestyle indicated (see Figure 30). For 5 (62.5%) there was evidence of increased independence, particularly where users have access to ECS and telecare. However for 3 users (37.5%) they also felt there had been an added benefit of feeling more safe in their homes, which assisted the feeling of greater independence.

"I am less anxious and more confident when I get up through the night. I think my daughter is less worried about me because she knows I am safe." (Service User)

All users believed that telecare had little or no impact on their feeling of social isolation, whilst for some the inclusion of ECS with their telecare system had assisted their ability to communicate more widely. In one case the increased ability to provide a combination of alerts and communication, enabled a user with no verbal communication, and his parent, increased independence. This alleviated the stress that caring can bring to a relationship and avoided potential need for urgent respite or longer term residential care.

"I am spending more time in my lounge, leaving my son in his room on his own and know he can shout for help when he needs it but also know he can do things for himself, without always having to ask" (Carer)

Figure 30 - Impact of Telecare on Community Users Lifestyle

	Strongly Agree	Agree	Neither agree or disagree	Disagree	Strongly Disagree
My health has been better since the telecare equipment was installed	1 (12.5%)		5 (62.5%)	2 (25%)	
I feel safer at home because of my telecare	2 (25%)	1 (14%)	3 (37.5%)	2 (25%)	
I feel more independent because of my telecare	2 (25%)	3 (37.5%)	3 (37.5%)		
I feel more lonely because of my telecare			3 (37.5%)	2 (25%)	3 (37.5%)
I feel more anxious because of my telecare		1 (12.5%)	4 (50%)		3 (37.5)
I think my family/carer worry about me less now		2 (25%)	3 (37.5%)	2 (25%)	1 (12.5%)
My family/carer need to help to help me less now		5 (50%)	2 (25%)	1 (12.5%)	

For some users and carers the inclusion of telecare in their lives did add to feelings of stress. Two users reported increased anxieties, for themselves and their carers, due to the impact of the installations, equipment not working efficiently following installation and aesthetically not being pleasing. This highlighted a need to provide access to pictorial evidence of potential installations, giving a realistic description of how telecare and linked technology may impact on the home environment. In addition a clear understanding, on the part of the assessor, regarding the expectations of the user and carer at the time of the assessment, may ensure that both user and carer are less anxious regarding the process.

Three users reported instructions given at the time of the installation were not clear. In all cases follow-up visits were carried out to ensure that users and carers were satisfied with their installations and understood how to operate the equipment. It is essential that follow-up visits and reviews of installations are carried out, to ensure both satisfaction and effective use of technology in meeting user need. As part of the project in Phase 1 the review and re-assessment process has not been fully integrated into mainstream provision. The process of referral, installation and training input from the engineers/providers, in addition to the services provided by mainstream local authority and health staff, did result in some confusion for carers and users, regarding lines of communication. In the medium to long term the process would ideally be integrated into ongoing mainstream intervention, with staff using technology as one of the tools in a client's support package, ensuring clear lines of communication for users and carers.

Five carers completed questionnaires, as part of the evaluation. Three carers reported feeling a bit less stressed following the installation, due in part to the peace of mind offered by inclusion of telecare in their relatives support package.

"I am more relaxed because I feel we have taken every precaution that we can to avoid the risk of Mum falling at a time when there is less likely to be assistance." (Carer)

However, as with users, some carers felt their stress levels had increased. This was primarily due to the impact the telecare installation had on their living environment. In both cases the increased stress levels felt by the carer was reflected in their views and value placed on the equipment by the user.

Partnership and Frontline Staff

Questionnaires relating to Phase 1 management systems were sent to members of the Aberdeenshire Telecare Project Group and to those frontline staff who had made referrals to the project. The aim being to ascertain:

Partnership Members:

- Value of the Telecare Project Group;
- Appropriateness of representation on the Group;
- Clarity of remit;
- Value of the Project;
- Needs for Phase 2.

Frontline Staff:

- Effectiveness of the Telecare Project in relation to staff and their clients;
- Value of advice and support from the Project;
- Value of telecare within general service provision.

Partnership Members

Questionnaires were sent to 17 members of the Aberdeenshire Telecare Group, of which 7 members returned completed questionnaires, representing a 41% return. One member advised as he had only been involved in early project meetings and withdrawn from subsequent involvement, he considered it inappropriate to make comment as he had only been involved in the early stages of the Project.

Group members indicated a general belief that representation from stakeholders was appropriate for Phase 1 of the Project, although one response indicated some concern about representation from health being inadequate.

"(I) do not feel that local health service delivery units are fully represented (i.e. CHPs). This might be down to what the perception is of the group and its function i.e. do the reps from the CHPs know what the purpose of the group is? I looked in my records for a role/remit for the group and could not find one – which doesn't mean that it does not exist, but maybe this needs clarified?" (SCT representative)

The majority of group members felt that the monthly meetings were of value, although throughout Phase 1 of the Project attendance was at times poor, due to pressure of other commitments. As with the issue of representation the clarity of purpose may have been a factor in this:

"Perhaps it was due to Telecare being a pilot but meetings did seem a bit repetitive and lengthy at times" (Service Manager)

The theme of remit continued to provide some concern for other group members, although some agreed that for Phase 1 of the project the function of the group met the needs of the project. One member believed that:

"The group had acted more as a reference group to validate the work of the project and in its role, in terms of project management has been less clear. A difficulty has been establishing a clear line of accountability to joint management bodies" (Strategic Planning Officer)

In order to move into Phase 2 of the project clarity of purpose, remit and levels of responsibility would benefit from re-definition. Group members agreed unanimously that Phase 1 of the project had produced the outcomes anticipated:

"I believe that in a short space of time i.e. 15 months, a great deal has been achieved from a position where there was little or no awareness of or provision of telecare. The project has created and set the agenda for the Aberdeenshire Partnership and has achieved direct positive outcomes for service users into the bargain, with limited staffing resources" (Strategic Planning Officer)

There was anticipation that Phase 2 would continue such developments, with group members being aware of the need for ongoing work throughout the partnership. Belief in the benefits to service users and their carers, as evidenced in Phase 1, assisted members to feel that Phase 2 required:

"Rollout out of telecare across Aberdeenshire. Continued development of staff training, public awareness raising. More input from service users and/or their carers, especially family. Open and accountable decision making about the level of telecare provision to be made available" (Voluntary Sector Representative)

"To become part of the menu of care and support options in all care management" (Service Manager)

"Establishment of procedures, protocols and service standards for the mainstream provision of telecare in assessment, care provision, procurement, installation, maintenance, repair, storage, response services and charging" (Strategic Planning Officer)

Some members highlighted areas where there was need to expand the remit of telecare, reflecting the joint partnership agenda between health and local authority, and the value of technology in supporting community based interventions. The aim is the achievement of more integration in service provision through:

"More progress on telehealth project and more consideration of how telecare/telehealth could be integrated to support patient care." (SCT Representative)

In relation to future membership there was a mixed response, with three responders indicating the current group membership was considered appropriate representation for Phase 2 of the project. A further three members indicated that additional representation from users, carers, and more input from NHS operational managers, contracts section, housing providers and the RCC would be beneficial. Original membership of the group had included some representation from NHS operational management, contracts officers, housing providers and RCC, however attendance from representatives had been sporadic. One responder felt that the group membership:

"…would benefit from a smaller group. I'm not sure who should be in the core group membership but social work, housing and health all need to be there but to a more limited extent than the pilot" (Service Manager)

Whilst Phase 1 of the project has achieved some significant steps forward, Aberdeenshire Telecare Group is aware of the need to establish clear terms of reference, ensuring clarity of purpose for Phase 2 of the project. There is a need to ensure group membership and structures support these goals, in an effective and efficient manner. This may require engagement with new members and re-engagement with those who have found attendance difficult or of low priority. Core to this may be continued training in telecare awareness at all levels of staff groups, across all stakeholders, establishing benefits through clear performance outcomes which demonstrate qualitative, financial and service gains.

Frontline Staff

Questionnaires were sent to 24 staff with 3 (17%) being returned. Effort to encourage improved returns were made by the provision of an extension of period to return completed questionnaires, the option to make returns electronically or by post, and verbal reminders to recipients, however the level of return was disappointing. A number of staff made verbal comments, during the course of the project, which were noted and have been used as supporting evidence for evaluation purposes.

All responses to questionnaires came from Occupational Therapy staff. The lack of response may be reflective of the connection and knowledge base, ownership, and confidence frontline staff feel they have with telecare and related technologies. During sessions of telecare awareness training staff have expressed concerns about adding another responsibility to their already stressed workload, demonstrating anxieties relating to being inadequately skilled or supported to implement telecare.

The staff who did make returns indicated that all had heard about the project and equipment through various training events, subsequently feeling that access to the service provided was generally easy, although one commented that contact during the interim period between Phase 1 and 2 was making some aspects of making a referral complicated.

The returns indicated that users did benefit from installations:

"One of my clients was TOTALLY dependent on others for absolutely everything. She is a young lady and thanks to telecare (and related technology) she can now operate the television – much to her husband's dismay -, music system, lamp, blinds, telephone and answer her door intercom independently even though she has very little speech."(Team Leader, Occupational Therapy)

The staff indicated a willingness to utilise telecare and related technologies in future practice, particularly for users with complex needs, long-term and progressive conditions. From the number of referrals from the Community Learning Disability Team since March 2008 there appears to be a willingness to utilise telecare in creative ways to establish higher levels of independence and ensure appropriate risk management within this client group too. Referrals from older people's services in the last quarter of Phase 1 of the project indicate a growing awareness of the value of telecare. However staff remain generally reticent to fully integrate telecare assessment and provision into mainstream practice.

Conclusions and Recommendations

Working within constraints of time and available human resources the Project has managed to achieve a significant number of assessments, installations and operational telecare and associated technology across most service user groups. However the scale of the evaluation is limited, primarily due to the limited number of installations which could be effectively evaluated, within the limited time remaining following installation. Therefore it is important that the Aberdeenshire Partnership explores the possibility of continued evaluation, which may clearly demonstrate the full value of telecare and related technologies, including cost benefits and impact on overall service provision.

Response from users and carers was positive, regarding experience of process and use of telecare. For many this has had a clearly beneficial impact on lifestyle, from provision of re-assurance to enabling individuals to carry out tasks independently and safely. Whilst the overall sample involved in the final evaluation is comparatively small, there appears to be emerging benefits in relation to reduction of admission to residential care homes and assisting people to return home following hospital admission. For a small number of users and carers the benefits of ECS were secondary to the impact on their home environment.

The benefits of flexible use of telecare and ECS in meeting needs of users presenting complex needs indicated potential financial benefits and shifts in service demands. The management of risk and enabling targeted support permitted some users with complex needs to remain in, or return to, their home environment, as opposed to transferring to residential care. In one service, installations permitted a reduction in levels of overnight staffing. Whilst recognising the limitations of this pilot study, such results indicate potential application throughout services in Aberdeenshire.

The majority of users and their carers advised of previous experience in using home based technology, which established a level of confidence in managing additional equipment introduced into their home environment. Concerns regarding impact on users' lives tended to be more prevalent amongst staff, this being linked to issues around social isolation, impacts on employment, and reliability of equipment. A process of information dissemination and training was initiated at the onset of the programme, this having an impact on referrals to the project, and remains an essential ongoing element of the implementation programme. Training would ideally continue to follow a number of alternative methods of presentation, including structured sessions, slots at team meetings and provision of individualised advice and support. However, basic training given as part of undergraduate and post-qualifying routes requires to be addressed on a national level.

In relation to the implementation process, the Aberdeenshire Partnership has made strides in addressing many of the requirements to rolling out a programme across the local authority area in conjunction with a large number of stakeholders. The long-term intention is to fully integrate telecare into mainstream service provision; however given the response from staff, throughout Phase 1 of the Project, there is a considerable amount of work required before this may be achieved. Staff from both local authority and health, throughout the project, have indicated reluctance to engage or take ownership for this aspect of service provision. In part this has been due to fear of additional work being placed on already stretched workloads and limited evidence of the value of technology in the potential toolbox of intervention. In order to achieve effective change within the existing structure, there is a need for a whole systems approach to be adopted, ensuring that telecare and linked technologies can be leveraged through whole systems working.

In the process of assessing and installing telecare the Project has demonstrated the importance in not just viewing telecare as a stand-alone solution to need. Each user has needed an individual solution which may require additional technologies to ensure effective access to and operation of the telecare equipment. Equally telecare offers potential monitoring benefits, which assist risk assessment and management process, and this phase of the Aberdeenshire Project has yet to use and positively exploit such capacity.

Current processes of assessment for Community Alarm, which is devolved from the role of Care Management and Occupational Therapy, do not assist the integration of telecare into practice for many professionals. During the course of the initial phase of the Project a number of staff have become interested in technology and its applications, with respect to their individual clients. Such interest would be further developed by ease of access to support from a localised "champion" who would be responsible for nurturing interest and encouraging integration into routine practice. Additional skills-based training requires to be provided for frontline staff at a local and national level, ensuring integration into care at home practice. Such skills base requires competency in completion of a holistic assessment, ensuring that social, functional, cognitive, psychological, and environmental needs are established prior to determining the technological response.

The processes of procurement, installation, storage and development, during Phase 1 of the Project have been dependent on the small scale of the venture. In order to move the implementation process on, enabling a broader user group, ensuring appropriate methods of procurement and related activity, there is a need to develop an action plan for the medium term and longer term. Linked to this has been the issue of accessibility to telecare, where users live in isolated areas and have no immediate responder. Flexible responder services, meeting diverse needs of both individuals in the context of the unique geography of Aberdeenshire, require to be developed, in conjunction with an integrated telecare provision. Included in the provision of equipment and ongoing service is a need to establish protocols and procedures for access, response and charging.

The planning process for telecare in Aberdeenshire requires to be phased, taking into account related developments and changes in provision, occurring across Community Care, Housing and Education. Phase 2 of the Project essentially needs to address the following areas:

- Review and definition of the role of the Aberdeenshire Telecare Group – enabling appropriate support structures to be in place to ensure effective strategic and implementation processes.
- Establishment of an Action Plan, working with colleagues in Housing and Health - ensuring an integrated and phased proposal for implementing telecare across service provision in Aberdeenshire.
- Establishment of clear assessment processes, including integration into SSA - this will require a phased approach with clear support networks. In the short to medium term there is a continued need for specialist input working towards frontline staff being skilled to complete the process independently.
- Development of protocols and procedures – ensuring defined processes linked to:

  Access to telecare and related technologies;

  Assessment and review;

  Procurement, tracking and storage;

  Installation and decommissioning;

  Use of technology and telecare, including risk assessment and management;

  Charging.
- Integration of protocols, procedures and processes linked into existing structures and systems – utilising a whole systems approach to implementation will enable effective and efficient implementation.

- Development of a training programme – including ongoing telecare awareness, more intensive training relating to practice for frontline staff and linking into the national training agenda.
- Provision of an accessible and defined support and advice service to front-line staff – this requires to be easily accessible enabling staff, users and carers potential to see and try out equipment. With Flat 10 remaining unoccupied consideration should be given to utilising the accommodation for this purpose.
- Further development of effective partnerships with health colleagues, linking telehealth and telecare, is essential – clearly defining roles, responsibilities, and expectations of project development; accessing ongoing support, and developing proactive working relationships with Scottish Centre for Telehealth will assist this process.
- Development of meaningful quality standards associated with telecare assessment, installation and service provision – consideration of working towards accreditation standards as part of a modular programme, with the Telecare Services Association, in the long-term would provide the partnership with a clear audit trail, achievement of good practice and a support network.
- Continued development of linkages with neighbouring partnerships – ensuring effective and economic sharing of resources, including training, procurement and use of Regional Communication Centre expertise.

To enable these areas to be addressed the Aberdeenshire Partnership require to establish a Project Manager to oversee the medium to long term implementation process, aiming at establishing telecare and related technologies into mainstream services.

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Useful links

www.actprogramme.org.uk

www.atdementia.org.uk

www.csip.org.uk

www.dlf.org.uk

www.goldshield-ltd.com

www.independentliving.co.uk

www.integratedcarenetwork.gov.uk

www.jitscotland.org.uk

www.possum.co.uk

www.rslsteeper.com

www.smartthinking.ukideas.com

www.telecare.org.uk

www.telecarealliance.co.uk

www.telecareaware.com

www.telecaremadeeasy.com

www.tynetec.co.uk

www.tunstall.co.uk

Appendix 1 - Aberdeenshire Statistics

Table 1 - Projected population by Council and NHS board area 2004-2024 (Aberdeenshire)

2007	2008	2009	2010	2011	2012	2013	2014	2015
240,819	241,187	241,514	240,800	242,257	242,412	242,513	242,566	242,569

2016	2017	2018	2019	2020	2021	2022	2023	2024
241,514	241,800	242,051	242,257	242,412	242,513	242,566	242,569	242,495

Table 2 - Projected population (000's)(2004-based) by sex and broad age group, Council and NHS board areas, selected years (Aberdeenshire)

	2004			2010		
Age	Persons	Males	Females	Persons	Males	Females
All ages	231.6	114.5	117.0	238.9	118.8	120.1
0-15	46.4	23.8	22.6	43.5	22.5	21.1
16-29	32.0	16.7	15.3	35.0	18.8	16.2
30-49	71.6	35.1	36.5	66.0	32.0	33.9
50-64	46.6	23.6	23.0	53.0	26.6	26.4
65-74	19.2	9.3	9.9	22.7	11.2	11.5
75+	15.7	6.0	9.7	18.6	7.7	10.9

	2014			2024		
Age	Persons	Males	Females	Persons	Males	Females
All ages	240.8	120.3	120.5	242.5	122.2	120.3
0-15	41.4	21.4	20.0	37.4	19.4	18.0
16-29	35.2	19.1	16.0	31.1	17.4	13.8
30-49	60.6	29.7	31.1	53.4	27.6	25.8
50-64	54.8	27.2	27.5	55.9	27.1	28.8
65-74	27.5	13.7	13.8	32.9	16.2	16.8
75+	21.2	9.1	12.0	31.8	14.6	17.2

Table 3 - Projected percentage changes in population (2004) based by broad group; Council and NHS board, selected years (Aberdeenshire)

	2010	2014	2024
All Ages	+3	+4	+5
0-15	-6	-11	-20
16-59	+1	-1	-9
60-65	+21	+39	+81
75+	+19	+35	+101

Extracted from Scottish Population Statistics

Appendix 2 - Case Studies

1. Mrs A

Mrs A is 63 years old and lives with her husband. She has MS and has very limited physical function, requiring 24 hour support and care. Her care package consists of 27.5 hours per week from home care, with her husband providing the remainder. Due to her husband's employment Mrs A spends about 4 hours per day on her own. The front door to the property was always unlocked and left ajar for ease of access for carers.

At point of assessment Mrs A was unable to fully access her community alarm, had not made telephone calls in 8 years due to her quiet voice and difficulties in accessing the telephone. Consideration of a move to residential care was being considered, due to Mrs A's physical deterioration and increasing risk.

Solutions

Provision of environmental controls that enables: increased security through provision of intercom and door opener; access to community alarm and telephone using appropriate switch system, integrated control system (Vivo) and microphone; and ensuring environmental comfort through ability to open the window, shut curtains, switch on lights, television and hi-fi.

2. Mr B

Mr B is an 81 year old man living on his own. He has hearing and visual impairments. Recently carers have been concerned about bruising and believe that Mr B is falling. It has been noted that he does stumble. There have been previous incidents of flooding as a result of Mr B being unaware of the kitchen tap being left on accidentally.

Solutions

In addition to the community alarm Mr B has been provided with a falls detector, which alerts carers to actual falls and data advising of near misses. Mr B was also provided with a Magiplug for his kitchen sink to avoid further risk of flooding.

3. Mrs C

Mrs C is an 84 year old lady who is wheelchair dependent as a result of polio. She lives on her own, is a very independent sociable lady whose main difficulty is access within her kitchen. Mrs C's fridge is situated behind the kitchen door, requiring the door to be shut to enable her access to the fridge. This regularly results in Mrs C getting shut into her kitchen and having to call for assistance through her community alarm.

Solutions

An automatic door opener with accessible switch system.

4. Mrs D

Mrs D is 43 years old and has a diagnosis of MS, currently being assessed as having Medium/High needs. She is wheel chair user and has limited physical movement, currently accessing 6 hours per week support, with her husband providing all other support for Mrs D and their 8 year old son who has a moderate learning disability and cerebral palsy. Mr D works part-time for a national voluntary agency resulting in Mrs D spending about 15 hours per week on her own. The family live in a remote rural setting and have not been connected to community alarm as they do not have relatives living in the area.

The family leave the back door unlocked as Mrs D is unable to respond to callers on time, leaving access for all comers. She is concerned for her safety but believes that the remote area provides some element of a safety net.

In discussion Mrs D advised that she is a member of a local interest group who meets at her home once per month.

Solutions

Provision of: community alarm, utilising Mr D and members of the interest group as responders; environmental controls allowing for access to telephone and door intercom/entry system, TV controls and radio, putting on lights and opening of windows.

5. Mr E

Mr E is a 47 year old with a diagnosis of MS, who lives on his own. Mr E is a wheelchair user who is very independent and is known for taking risks that worry professionals involved in his care. Mr E has been offered a care package which was not effective due to his wish to have a flexible lifestyle. Recently Mr E has been having falls from his bed and when transferring, resulting in him being on the floor for up to several hours before either managing to get the energy to right himself or obtain assistance. Mr E advised that he leaves his front door unlocked, enabling ease of access for carers, and has on occasion had unwanted visitors. Mr E already has a community alarm.

Solutions

Provision of: a bed sensor and fall detector to provide alerts should Mr E fall, connected to community alarm; environmental controls allowing for access to telephone and door entry/ intercom system to ensure improved security and access to a variety of entertainment equipment, opening of windows and blinds.

6. Ms F

Ms F is a 34 year old with learning and physical disabilities, living in supported accommodation, in her own 2-bed flat. Ms F is a wheelchair user. At point of assessment Ms F accessed a 24-hour care package including sleep-over based in the spare bedroom in her flat. Ms F wishes to have more time on her own and to utilise her spare bedroom for family members to come and stay. Ms F is assessed as being a vulnerable woman who is at risk of letting strangers into her home, if left alone. The service currently provides for two other sleep over supports for a total of 9 tenants.

Solutions

Provision of dispersed alarm system, linked to contact points on front door to flat which will alert staff to potential visitors being allowed into the flat. Ms F has been assessed for the most appropriate switch system ensuring appropriate access to the alarm system when she is in her wheelchair or in bed. Access to telecare is enabling Ms F to have a reduced service and time on her own, including sharing a sleepover support service with other tenants rather than having a dedicated service.

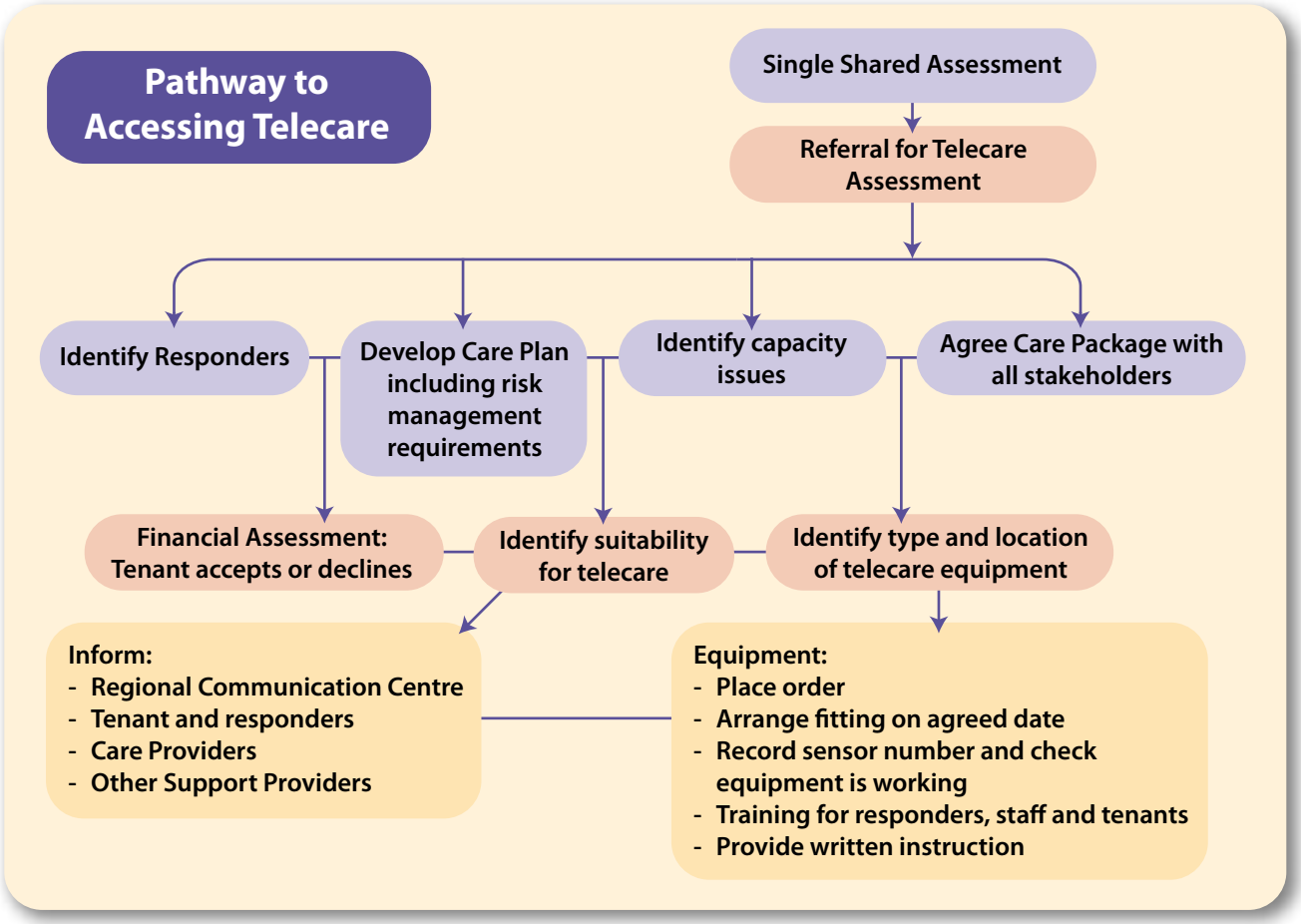
7. Mrs G

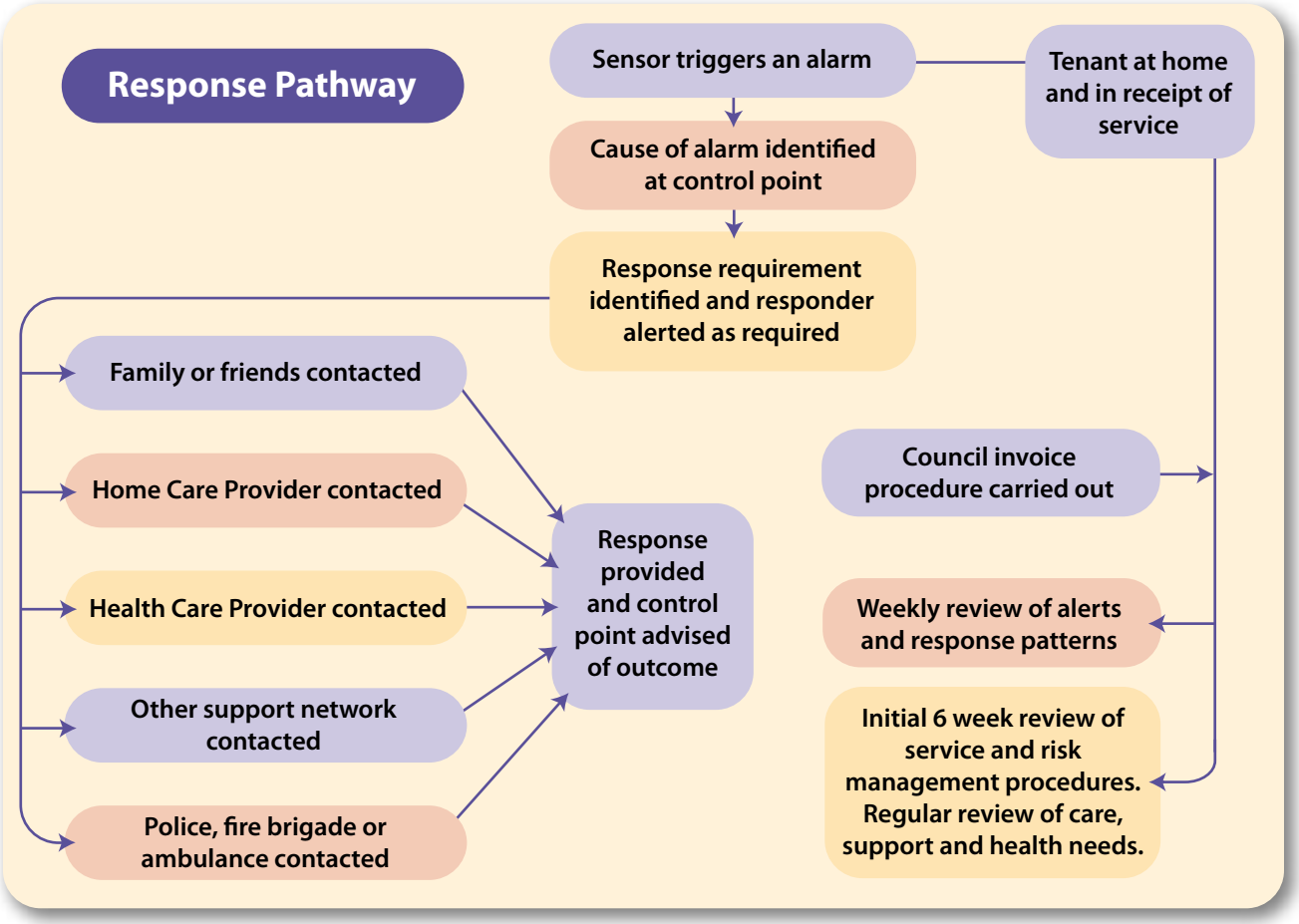
Mrsars of age, is widowed and lives in a "granny flat" attached to her daughter's house. Mrs G has advanced dementia and was admitted to hospital following an infection and fall. Mrs G wanted home and her daughter also wanted her home, however the multidisciplinary team felt the time had come for Mrs G to be admitted to a care home. It was decided to provide Mrs G with a package of telecare, home care and day care provision to enable discharge.

Solutions

Mrs G was provided with falls detector, bed sensor and basic community alarm. In addition her daughter was provided with a pager, being able to respond when she was at home, thus avoiding alerts going through to the call centre. A Magiplug was provided to prevent floods in the kitchen and a night light with PIR was provided to enable Mrs G to find her way to the toilet during the night. Contact points were fitted to the front door, to alert Mrs G's daughter should Mrs G wander outside during the night.

Appendix 3 - Proposed Pathway to Telecare





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