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joint improvement team



Dementia Services
Development Centre



Telehealthcare and falls

Using telehealthcare effectively in
the support of people at risk of falling



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Preface

This book explains how telehealthcare can enable a fast response to falls, offering reassurance as well as a practical response in an emergency. It also describes how telehealthcare – that is, equipment combined with assessment, monitoring and response services – can reduce the risk of falling as part of a comprehensive individualised falls prevention and management programme. Additionally, it describes the role telehealthcare can play in providing support and reassurance to carers.

It is one of a number of publications funded by the Scottish Government's National Telecare Development Programme¹, in pursuit of the strategic goal of raising awareness of the importance of telehealthcare in contemporary health and social care services. The other books in this series are:

- Telecare and dementia – using telecare effectively in the support of people with dementia
- Telecare and physical disability – using telecare effectively in the support of people with severe physical disabilities and long-term chronic conditions
- Telecare and sensory impairment – using telecare effectively in the support of people with sensory impairments
- Telecare and learning disability – using telecare effectively in the support of people with learning disabilities
- Telehealthcare and mental health – using telehealthcare effectively in the support of people living with mental disorder

The books are written for community care assessors, care and support staff and their managers, telecare service managers and development staff. This book should be of particular relevance to falls coordinators and rehabilitation and reablement teams. Senior managers should also find the series useful in informing service planning, and they should help raise awareness, expectations and generally advance understanding among service users and carers.

Each book also contains case examples and a training programme designed to help trainers when designing both awareness-raising and skill-development programmes. Programme directors responsible for basic and post-basic programmes for nurses, housing staff, social workers, occupational therapists, physiotherapists and other allied health professionals should consider these as a sound basis for a module on telehealthcare.

Examples of equipment which might contribute to the safety and quality of life of people at risk of falling are featured in this book. The aim is to support readers to make sound decisions by providing information on some of the wide range of telehealthcare products available. The books do not endorse any specific product or supplier, but provide examples of what is currently commercially available or emerging on to the market. Where possible, details of suppliers/manufacturers have been provided at the end of each book.

Examples of equipment which might contribute to the safety and quality of life of people at risk of falling are featured in this book.

1: Introduction

We all rely increasingly on technology in almost every aspect of our lives. Within our homes, devices such as microwaves, DVD players and TVs enhance the quality of our lives and reduce the amount of time we spend on the drudgery of housework. We rely on computers and mobile phones for information, social contact and entertainment, and to help us make informed choices about purchases and services. Away from home, technology such as GPS (global positioning systems) and satnav (satellite navigation) – often incorporated into our mobile phones – has the potential to guide us, keep us in touch, and keep us safe.

People who are more vulnerable and dependent as a consequence of age or disability ought to have the same access to, and benefits from, this increasingly cheap and accessible technology. As we grow older or develop certain disabilities, the risk of falling increases, and, almost as importantly, associated levels of anxiety can increase. Concerns may relate to falling and the prospect of lying for a long time and being unable to summon help. The person may also worry about not being found at all. Someone at risk of falling may be anxious about the consequences of a fall in terms of broken bones, pain or their long-term loss of mobility and independence. Telehealthcare can help reduce the risk of falling and the associated harm that can result, along with the anxiety around potential falls. As such, it can enable those at risk of falling to maintain their independence and quality of life.

Demographic change, and the key social policy agenda of shifting the balance of care from institutions to care at home in the community², also requires us to maximise the benefits of technology. There is now plenty of evidence to show that telehealthcare can release significant resources from within health and social care systems and facilitate changes in the balance of care³. Over 6,000 people fracture their hip in Scotland each year, and nine out of ten of these fractures are preceded by a fall. The average cost of hospital treatment for a patient over 60 undergoing surgery for a hip fracture is estimated at £20,000. The estimated annual cost of this hospital treatment for NHS Scotland is around £73 million (and this relates to acute care only)⁴. In the present climate, it is vital that we explore every possible opportunity to reduce such costs in ways that maintain or improve important outcomes, such as independence and feelings of safety. Telehealthcare provides one such opportunity.

In summary, this book will outline how telehealthcare can contribute to improved outcomes for people at high risk of falling. It includes sections on:

- definitions of telehealthcare (along with the related concepts of telecare, telehealth, assistive technology and environmental controls)
- the causes, consequences, prevention and management of falls
- the importance of good needs and risk assessments
- ethical dilemmas and how these can be resolved

Demographic change, and the key social policy agenda of shifting the balance of care from institutions to care at home in the community, requires us to maximise the benefits of technology.

- how the risk of falls and the resultant harm they cause can best be reduced and managed using telehealthcare as part of a package of risk assessment, management, prevention, care and support
- issues particular to carers
- case examples and an outline training programme

Definitions: what is telehealthcare?

There are no universally agreed definitions of terms such as telecare, telehealth, and telehealthcare. In this book the term telehealthcare is used to describe equipment within and outwith the home that remotely monitors changing needs and risks, and provides alerts and information that enable improved and informed responses to those needs and risks. The term 'equipment' encompasses alarms, alerts and monitors within the home; tracking and communication devices linked to GPS; and mobile and landline telephones.

The distinctive feature of telehealthcare is that the equipment used enables a response or service to be delivered to someone remotely – that is from a distance and at a separate location (hence the prefix 'tele' as in telegram, telephone and television).

Readers may be more familiar with terms such as 'telecare', 'telehealth' and 'assistive technology', than with this relatively new umbrella term. The definitions below are taken from the Education and training strategy published by the National Telecare Development Programme, and the Scottish Centre for Telehealth, in 2010⁵.

Telehealth is the provision of health services at a distance using a range of digital technologies. Examples of telehealth include video consultations⁶ to support diagnosis and management, clinical networks and health professional education.

Telecare is the remote or enhanced delivery of care services to people in their own home or a community setting by means of telecommunications and computerised services. Telecare usually refers to sensors and alerts which provide continuous, automatic and remote monitoring of care needs, emergencies and lifestyle changes, using information and communication technology (ICT) to trigger human responses, or to shut down equipment to prevent hazards.

Telehealthcare is the convergence of telecare and telehealth to provide a technology-enabled and integrated approach to the delivery of effective, high-quality health and care services. It can be used to describe a range of care options available remotely by telephone, mobile, broadband and video conferencing. There is accelerating convergence between telecare and telehealth technologies, with the introduction and expansion of long-term conditions monitoring as part of the 'telehealthcare' package available in a person's home, and as part of falls prevention and management.

Telecare has historically been associated with social care – as distinct from telehealth and telemedicine. Use of two separate terms can encourage a separate classification of needs and with it argument about whose responsibility it is to meet these. Hence the importance of the newer term, telehealthcare.

Assistive technology

Assistive technology is the collective term for all devices for personal use designed to enhance the physical, sensory and cognitive abilities of people

Telehealthcare is the convergence of telecare and telehealth to provide an integrated approach to the delivery of effective, high-quality health and care services.

with disabilities to help them function more independently. For example, telehealthcare is often considered to be one type of assistive technology.

The distinction between standalone assistive technology and telehealthcare lies in the fact that telehealthcare enables the provision of a response or service from outside the home. Telehealthcare has the potential to provide care at a distance, or for the service user to seek help from someone outwith their home.

Environmental controls

Environmental controls are equipment systems that enable people with higher levels of physical impairment or chronic health problems to control access to their home, to summon emergency help and to operate domestic appliances. For instance, a single remote control unit can enable a wheelchair user to control temperature and open and close windows, curtains and doors (in addition to the more conventional functions of controlling TVs, DVD players, and audio equipment).

Telehealthcare as part of a personalised service

Telehealthcare should not be seen as the *solution*, a single one-dimensional response to needs or risk. In relation to falls, telehealthcare equipment does not by itself *prevent* falls, but instead will provide an alert after a fall. It will therefore enable and accelerate a response, and it can reduce anxiety about being left to lie on the floor for long periods of time.

Other kinds of equipment do have the potential to reduce the risk of falling. Examples include light sensors, rails, chair and toilet raisers.

Telehealthcare is most effective when it forms part of a personalised programme or package of care and support, and is accepted as such by the service user, their informal carers and other staff/services.

To be effective telehealthcare requires:

- informed, skilled and personalised outcomes-focused assessment of needs and risk
- resolution of ethical dilemmas around capacity, informed consent and choice (for each individual in each situation)
- training and education for the service user, carers, personal care and support staff in how the equipment can be used or misused and how it should be tested and maintained (for example, battery replacement)
- robust call management response protocols
- regular review

Telehealthcare services

So far, this introduction has only discussed equipment. The term 'telehealthcare services' sets the use of equipment in the wider context of health and social care services. In a practical sense, this means efficient, up-to-date monitoring or call centres with trained staff who have access to personal health and social care data and response protocols. These staff may need to be available every day of the year, and will be skilled in making judgements about the information and alerts sent by the equipment, and in facilitating the most appropriate response possible. Such centres are absolutely essential to the effective use of

Telehealthcare is most effective when it forms part of a personalised programme or package of care and support.

most telehealthcare equipment. While different agencies may organise their call handling or monitoring staff in different ways, the presence of someone who can interpret the information, provide reassurance, follow detailed individual protocols, and understand the basics of how equipment works is essential to ensuring the maximum benefit to the service user.

Appropriate response arrangements must also be in place, incorporating individualised response protocols which ensure the best possible response to the immediate need or situation. Traditionally this has relied on key-holders – relatives or neighbours who, when contacted by the call centre, would call on the service user and solve the problem or contact services as necessary. Increasingly, in response to higher levels of dependence, more complex needs and new technology, agencies are deploying teams of trained carers, who can respond to an emergency and provide personal care, reassurance, or contact other emergency services as necessary.

In order for telehealthcare services to have maximum impact on wider policy goals such as shifting the balance of care, they need to be conceived as part of, and located within, local health and social care strategies for different client and patient groups. Service planners need to articulate how telehealthcare developments will enhance home care and housing support services not as an ‘add-on’, but as an integral part of health and social care service options.

Risk and reliability

No equipment can be 100 per cent reliable forever, in the same way that no ‘human’ service is completely and consistently reliable. Equipment will come with a manufacturer’s guarantee, but in the event of a fault an engineer may need to be called out, and there may therefore be gaps in service provision, even when monitoring is required ‘24/7’. Equipment which relies on mobile phone signals, internet access or landlines to transmit information will, on occasion, experience the lapses in service that affect these systems. To counter these risks, telehealthcare services need to include backup, testing and business continuity arrangements (although of course equipment purchased privately may not have these safeguards as standard).

‘Interoperability’ is a significant issue. This refers to the problems that arise when equipment developed by one manufacturer is not compatible with the call-handling or monitoring system(s) which are already in place, and which were made by another company. Significant progress has been made in resolving this issue since the introduction of a new British Standard⁷. Much still depends on the willingness of providers and manufacturers to adopt this standard and share protocols, as well as awareness among purchasers and commissioners of the right questions to ask.

It is very important that these issues are taken into account when care packages are being put together through the use of proper risk assessments and appropriate risk management arrangements.

Access and availability

This book includes examples of equipment that has the potential to contribute to the safety and quality of life of people in need. The examples have not been selected to promote the products of any particular company, but instead to raise awareness of what can be done and what is (or will soon be) available.

No equipment can be 100 per cent reliable forever, in the same way that no ‘human’ service is completely and consistently reliable.

Where a product is featured, details of the company that sells or manufactures it have been included (see page 43).

Companies specialising in telehealthcare equipment are increasingly able to personalise their products to meet the needs of individual users. Furthermore, they recognise the importance of developing new applications from this starting point. Manufacturers would argue – with some justification – that the scope of what telehealthcare equipment can do is limited by our imagination, rather than by the technology. The cost of equipment is falling, and public bodies now have procurement arrangements in place which should further reduce this cost. In addition, companies welcome contact with service users and professionals to help them understand needs which might be met through new applications.

Some telehealthcare equipment – for example blood pressure monitors or some fall detectors – can be bought on the high street, and this is a trend that is likely to increase as expectations and understanding of the potential of telehealthcare increases. However, an important part of a telehealthcare service is the response. There needs to be some way in which the information or alert generated by the equipment can be transmitted to someone with the skills and technology to generate a fast and appropriate response.

Currently the major providers of telehealthcare services are local authorities – increasingly in partnership with health authorities. Purchasing budgets may be available to enable practitioners to access equipment as part of a care and support package. Alternatively, service users should be able to purchase equipment using their individual budgets (self-directed support or direct payments).

One consequence of the development in telehealthcare services over recent years is that many authorities have recruited coordinators, or have designated ‘champions’ within local services⁸. These staff can advise on availability and access, and should find these books helpful in their task of promoting the use of telehealthcare among different client and patient groups.

Telehealthcare and *Up and about*⁹

Up and about: pathways for the management and prevention of falls and fragility fractures, focuses attention on the key stages of the journey of care of an older person living in the community. It presents, in one document, an overview of the various aspects of fall and fragility fracture prevention and management and attempts to demonstrate how these link to provide comprehensive, coordinated and person-centred care. The Practice Development Unit of NHS Quality Improvement Scotland (NHS QIS) produced this document as part of a two-year prevention and management of falls programme (December 2007 to December 2009). It divides the journey of care into four stages:

1. Supporting health improvement and self-management to reduce the risk of falls and fragility fractures
2. Identifying individuals at high risk of falls and/or fragility fractures
3. Responding to an individual who has just fallen and requires immediate assistance
4. Coordinated management, including specialist assessment

Telehealthcare has the potential to support people at each of these stages, and this book focuses on how this can be achieved.

Some equipment can be bought on the high street, a trend that is likely to increase as expectations and understanding of the potential of telehealthcare increases.

2: Introduction to falls

This chapter introduces the topic of falls. It outlines why the presence of certain risk factors can make some people more likely to fall than others. The potential consequences of falls, both for the individual and for health and social care services, are also briefly described. Interventions to prevent and manage falls are listed.

What is a fall?

A fall has been defined as ‘an event which results in a person coming to rest inadvertently on the ground or other lower level’¹⁰. This definition excludes ‘trips’ where balance is regained successfully and the person does not come to rest on the ground.

Who falls?

Most people experience a fall at some time in their life, normally resulting in little more than embarrassment. However, as we get older falls can become more common and the consequences of falling can become more serious. Injury caused by falls is the leading cause of accidental death for people aged over 75.

Each year, more than a third of people aged over 65 experience one or more falls. Almost half of people aged over 80 who live in the community fall each year. Between 10 and 25 per cent of such fallers will sustain a serious injury¹¹. Older adults who fall once are two or three times more likely to fall again within a year¹². Most non-injurious falls (75–85 per cent) are never reported to health professionals.¹³

Why are some people more likely to fall than others?

It is often accepted that falls are an inevitable consequence of getting older. However, this is not the case:

- most people aged over 65 *do not* fall each year
- falls can be the first sign of a new or worsening health problem
- falls are often markers for the onset of frailty

Falls are nearly always due to the presence of one or more risk factors. Often an older person will have a combination of risk factors, and the more risk factors that are present, the greater the risk of falling. Risk can relate to the individual and/or their surrounding environment.

As we get older falls can become more common and the consequences of falling can become more serious.

Risks relating to the individual ('intrinsic' risk factors) include:

- previous falls
- ageing causing changes in the body
- certain medical conditions
- being less physically active
- side effects of some medications and/or excessive alcohol

These risk factors can result in many changes in an individual, including:

- weak muscles, unsteadiness and/or difficulty in walking and moving around
- slowed reactions
- foot problems
- numbness in the ankles and feet
- vision and hearing problems
- dizziness and/or blackouts
- continence problems
- fear of falling
- cognitive problems such as memory loss; lack of awareness of safety; not knowing their own limits; risk-impulsive behaviour; confusion; and reduced understanding

Risks relating to the surrounding environment ('extrinsic' risk factors) include:

- poor lighting, especially on stairs
- low temperature
- wet, slippery or uneven floor surfaces
- clutter
- chairs, toilets or beds being too high or low, or unstable
- inappropriate or unsafe walking aids
- improper use of inadequately maintained wheelchairs, for example, brakes not locked or footplates obstructed
- unsafe or absent equipment, such as handrails
- loose-fitting footwear and clothing

Recognising and modifying an individual's risk factors is crucial to preventing falls, and the injuries caused by falls. However, a balance between prevention and living with risk needs to be struck. The aim is to prevent falls whilst preserving independence, encouraging a physically active lifestyle and maximising quality of life. Although many falls are preventable, not all falls can be prevented.

What are the possible consequences of a fall for an individual?

The impact of a fall can potentially be physical and/or psychological. Approximately ten per cent of falls result in a serious injury; around five per cent are fractures¹⁴. Hip fractures remain the most serious consequence of a fall and the commonest cause of accident-related death in older people. 20 per cent die within four months and 30 per cent within a year. Approximately half of those who were previously independent become partly dependent following a hip fracture, while one third become totally dependent.¹⁵

Recognising and modifying an individual's risk factors is crucial to preventing falls, and the injuries caused by falls.

A non-injurious fall can still be fatal if the person is unable to get up from the floor and summon help. Lying on the floor for more than 12 hours is associated with pressure sores, dehydration, hypothermia, pneumonia and even death. Almost 50 per cent of people who fall need help to get up after at least one fall; ten per cent of falls result in a lie of greater than one hour.¹⁶

Worrying about falling

Many older people, whether or not they have had a fall, experience a fear of falling. Anxiety about 'what if ...' leads to people restricting activities, becoming reluctant to venture out, and a gradual loss of their independence and quality of life. The fear of lying for a long period behind a door, alone and cold – perhaps even dying alone – is particularly acute.

Depression, fear of falling, anxiety and other psychological problems are common effects of repeated falls, and are collectively known as 'post-fall syndrome'. Loss of confidence can occur, as well as social withdrawal, confusion and loneliness, even when there has been no injury. The psychological consequences of falling are common and wide-ranging and can often be helped. During preparation of the *Up and about* resource¹⁷, the authors organised group discussions with older people and their carers in three areas of Scotland. There was unanimous agreement that a fall can be a life-changing experience resulting in loss of confidence, combined with fear, anxiety, embarrassment, depression and a reduction in activity, socialisation and quality of life. Comments included: 'I was never the same after the fall'; 'I suddenly became an old person'; 'I don't really feel the same person'; and 'I was thoroughly demoralised'. Participants felt it was extremely important for health and social care professionals to appreciate the potential psychological consequences of falling – or the fear of falling.¹⁸

The importance of falls (and falls prevention) for the NHS and social care services

Due to the prevalence of falls, associated costs for health and social care services are significant. Nearly half of A&E attendances in the over-65s can be the result of falls¹⁹. The Scottish Ambulance Service responds to approximately 35,000 falls a year – the largest single presentation in the over-65s (exceeding the number of presentations with chest pain, breathlessness and loss of consciousness). The substantial cost to the NHS of treating hip fractures has been outlined in the introduction. Although the percentage of people who fracture a hip as a result of a fall is low, absolute numbers are high. Fractured hips account for 50 per cent of injury-related hospital admissions and 66 per cent of bed days for people over 75. In terms of social care, a history of falls is a factor contributing to 40 per cent of admissions to care homes.

Depression, fear of falling, anxiety and other psychological problems are common effects of repeated falls.

The prevention and management of falls and fractures

Tailored intervention programmes, against a background of the identification of recognised risk factors, can be effective in preventing falls. Measures which have been found to reduce the risk of falls and their unwanted consequences include:

- exercise programmes to improve strength, balance and walking
- medication review with modification/withdrawal where appropriate
- reducing environmental hazards
- promoting the safe performance of daily activities
- managing foot problems and wearing suitable footwear
- correcting visual problems
- managing postural hypotension (low blood pressure)
- managing heart rate and rhythm problems
- treating osteoporosis
- providing vitamin D and calcium supplements
- providing information, education and lifestyle advice
- using strategies to avoid a long time spent lying on the floor

Some older people may be reluctant to report falls to a health or social care professional or accept offers of services to prevent further falls and injuries. Research suggests *how* the falls prevention message is imparted is key to older people's engagement in falls prevention. Discussion with the older person should emphasise the *benefits* of taking part in a falls prevention programme, such as finding it easier to carry out daily tasks; greater independence; and improved quality of life.

Some older people may be reluctant to report falls to a health or social care professional or accept offers of services to prevent further falls and injuries.

3: Assessment

An effective and efficient outcomes-focused needs assessment is essential if the potential of telehealthcare for people at risk of falling is to be maximised. At its best, telehealthcare forms part of an individual ('personalised') package of care and support. To achieve this, individual needs must be identified and telehealthcare then considered as part of the potential personalised response. This chapter focuses on needs assessments that might lead to the introduction of telehealthcare for people who have fallen.

Irrespective of local arrangements for managing and delivering community care needs assessments, there are a number of additional considerations in the needs assessment of people who have fallen, or where the risk of falling is the reason for referral. An increasing number of services carry out an extended assessment to ensure the reasons *why* a person is falling are explored. Some services use multifactorial screening tools or checklists which enable the assessor to consider systematically the factors which may have contributed to a person falling*. A multifactorial falls risk assessment is important in identifying an individual's specific risk factors, i.e. why they are falling. Following this assessment, and in discussion with the individual, measures are selected to reduce risk where possible. Multifactorial assessment and other interventions are usually provided by a multidisciplinary team, which may include a doctor, nurse, occupational therapist, physiotherapist, dietitian, podiatrist, pharmacist, exercise instructor and support workers.

In cases where an individual has been referred for a telehealthcare assessment directly from a falls prevention service, a multifactorial screening will usually have been carried out recently and may not be required. In these situations, discussion with the referrer can help prevent duplication of effort and repetition for the individual.

A multifactorial screen or checklist may ask the assessor to consider the following:

Falls risk in the home environment

- do the floor coverings (carpets, lino, rugs) present a hazard?
- how well lit are the rooms? Are all the lights working?
Does the risk of falling rise as dusk sets in?
- are there obvious obstructions that could create trip hazards?

* See for example NHS Tayside Community Alarms Falls Screening Questionnaire. Contact Carolyn Wilson, Falls Service Manager, Perth Royal Infirmary, carolynwilson@nhs.net. Falls Management Home Screening Tool: Falkirk Council/NHS Forth Valley Falls Management Project: Contact Linda Saunders (linda.macpherson@falkirk.gov.uk).

At its best, telehealthcare forms part of a personalised package of care and support.

- is the armchair that the person usually sits in easy to get in and out of, or might its condition or design increase the risk of a fall when the person tries to get up?
- is the bed too high or unusually low, creating risk when getting in or out of bed?
- is the mattress old and soft, making it difficult to get in or out of bed?
- is there any equipment already in place to make it easier to get out of beds and chairs? (for instance recliners, raisers or bed sticks)
- is there any equipment already in place on the stairs or in the bathroom to ease mobility and reduce risk? (for instance grab rails, stair rails or a raised toilet seat)

Falls risk outside the home

- are there steps up to the front door, and if so is there a rail to hold on to?
- is there a back entrance with steps down into the garden or drying area? If so, is there a rail? Is there damage to the steps? Do they get wet and slippery?

Falls risk relating to the person

- what is their attitude to any falls that have occurred? Can they remember the circumstances? Did they feel dizzy or black out? Are they willing to discuss the number of falls they have had, or why they think a fall might have occurred? Are they able to discuss their anxieties of what the fall, falls or pattern of falls might mean?
- are they reluctant to talk about falls and the fear of falls because they believe you will arrange for residential care or 'put them away'?
- do they think the fall was a one-off, or do they fear further falls? What do they see as the solution?
- how old are they? (the likelihood of falls increases with age)
- how well can they see – and are any spectacles they have clean and in good order?
- what and how many medications are they taking, and how recently have they been reviewed? (it is possible that falls may result from side effects of medication or the interactions between medications)
- are any of the medications they take associated with falls?
- do they have a long-term medical condition which can contribute to the risk of falling and/or fracturing (examples include dementia, Parkinson's disease and osteoporosis)
- is there a confirmed history of falls – and where and when did these happen?
- has their daily routine changed since their last fall, or since they began to fall?
- how do they manage when getting up from a chair, walking a few paces, turning and sitting down again? Is this a high-risk movement? Are they safe and steady and able to do this in a reasonable time?²⁰
- how easily are they able to get in and out of bed?
- is there a pet – a beloved dog or cat – that is inclined to be in the way when the person is moving about?

A multifactorial risk assessment is important in identifying an individual's specific risk factors, i.e. why they are falling.

Experienced specialist telehealthcare assessors have identified three things they consider critical when assessing someone who has fallen or is at risk of further falls:

- great care and sensitivity is required to establish the person's attitude to any fall that has occurred, including their degree of anxiety about the future and the consequences. Many people will experience a real fear that their family or care services will decide that the risks of continuing to live independently are no longer manageable
- the idea of telehealthcare should not be introduced until the overall situation has been assessed, the risk factors discussed and a shared understanding established. In particular, references to and proposals for fall detectors should *not* be spoken of until the outcome of the assessment is clear and can be shared. Fall detectors may be one part of the solution, but they may not be needed at all. For example, improvements to the environment or alterations to medication may be all that is required, and there should be no early suggestion that detectors on their own are the solution. This could lead to a false sense of security or a lack of understanding of what the real risks are
- an action plan to address the risks identified in a multifactorial screen should be discussed and agreed

Risk assessment – general

Risk assessment is a critical component of a good needs assessment. It takes into account the degree of risk experienced by the person, thereby identifying ways in which telehealthcare can assist in the management of risk (by the person themselves, as well as by services). It includes risks in the home as well as outside. These may include risks:

- of fire if the cooker is left on
- of flood if the bathwater is left running
- of scalding in over-hot bathwater
- of unwelcome visitors
- of getting lost
- of harassment
- of hate crime

The most basic equipment, such as flood alerts, smoke alerts and carbon monoxide detectors, reduces risk in obvious ways. For people with cognitive impairments (for example arising from brain injury or dementia) and some sensory impairments, going outside and travelling can be particularly risky. If the nature of such risks is identified, then appropriate equipment can be selected. This process is illustrated in later sections of the book.

While telehealthcare can be important in the management of risk, it cannot eliminate risk completely. No equipment yet devised is 100 per cent reliable. Routine testing and maintenance (for example battery changes) are essential to maximise reliability. Even so, malfunctions can occur. Service users – or more often their friends, children or grandchildren! – may inadvertently trigger or disable alarms, and monitoring centres will not always be aware of this. So it is important to allow for reliability and human error in any risk management plan.

Telehealthcare can assist with the management of risk, but it cannot eliminate risk completely.

Using telehealthcare to enhance assessment

Some companies have developed equipment which can log detailed information about a person's movement, lifestyle and routines within their home. This is used for needs and risk assessment purposes, as distinct from safety. An example is Just Checking²¹ ①, a portable activity-monitoring system designed for people with dementia (although not necessarily limited to that group). Small wireless movement sensors are triggered as the person moves around their home. These generate an activity chart which can be accessed via a secure website. This very detailed timed data can provide a much more accurate picture of a lifestyle than is possible from conversation with a person with cognitive impairment, or from carers who do not live on-site. Support, protection and care arrangements can then be targeted more accurately in a person-centred way.



Carers' assessment

In Scotland there is now a statutory duty to offer informal carers an assessment of their needs arising from their caring responsibilities. This focuses on how they can be helped to sustain their contribution to the care of a person in need²². Sometimes, the worry that carers have about the risk of their relative falling is greater than that felt by the person. The associated stress – whether the carer lives with their relative or not – can be severely debilitating, significantly reducing their capacity and willingness to care.

Recent research has confirmed the extent to which telehealthcare can reduce pressure on carers; support them in their caring role; increase peace of mind about the safety and wellbeing of the person they care for; and enable them to sleep better. It follows that a comprehensive carers' assessment will include consideration of the potential of telehealthcare to indirectly benefit carers by helping them continue to care.

Research also confirms, however, that many carers are unaware of the availability of telehealthcare. It cannot be assumed that carers – especially 'new' carers – will be aware of the possibilities telehealthcare offers. Equally, carers will have their own anxieties, and perhaps guilt, about using telehealthcare. They may be concerned about its reliability or whether they (or the person they care for) will understand it and be able to make it work. These issues will be considered in more detail in later chapters of this book. At this point it is important to emphasise that information needs to be made available to carers, and that where a carer's views are sought at the needs assessment stage their perspective and needs should be included and recorded.²³

Recent research has confirmed the extent to which telehealthcare can reduce pressure on carers and support them in their caring role.

Information-sharing – an additional role for telehealthcare

The potential role of telehealthcare assessors as multifactorial falls risk assessors has been outlined above. By considering the range of factors contributing to an individual's risk of falling, other useful measures to prevent and manage falls can be identified and suggested to the individual besides telehealthcare.

Telehealthcare services, particularly community alarm services, have the potential to play another role in falls management and prevention. Records kept by the monitoring and response service can identify numbers and patterns of falls over a period of time. A change to the frequency or pattern can suggest

Members of the telehealthcare team are ideally placed to discuss recurring falls with an older person.

a change in the health and wellbeing of the older person, and can indicate the need for further assessment of needs by the health and social care team.

Members of the telehealthcare team are ideally placed to discuss recurring falls with an older person and highlight the benefits that further assessment can play in establishing the cause of the falls and preventing further incidents. For example, West Lothian Home Safety Service[†] carries out a telephone check on everyone recorded as having fallen by the call handlers. They offer a review of their equipment provision, carry out a brief five-question assessment (developed by the falls coordinator), then make referrals to other appropriate services, such as occupational therapy. The information is recorded on the shared database for other services to be aware of.

[†] Information from Anne Sherriff, Group Manager, Occupational Therapy and Technology Service, Social Policy, Strathbrock Partnership Centre, 189A West Main Street, Broxburn, EH52 5LH, 01506 775623, anne.sherriff@westlothian.gov.uk.

4: Telehealthcare and falls

This chapter explores the potential and value of telehealthcare to people at risk of falling. Examples of telehealthcare equipment, with an indication of how they might be used, are provided, with some case examples. Where possible, photographs of the pieces of equipment referred to have been included. Numbers identifying pictures also link in to manufacturers' contact details on page 43.

Examples of telehealthcare for people at risk of falling

Pull cord alarm 2 and 3. This can be pulled by the person to activate an alarm which alerts staff or a carer in the vicinity, or connects to a call centre. It is only useful if the person is near enough to the cord to reach it or able to move to pull it, and hasn't lost consciousness as a result of a fall.

Pendant alarm trigger. Community alarm equipment which can be worn around the neck or wrist. When the button is pressed, the devices shown in figures 4 5 6 and 7 trigger an alarm. The model shown in figure 8 can also be used to summon assistance (in this case by pressing a combination of two buttons) but in addition operates as a very small cordless telephone. This can be used to take all incoming calls and make emergency outgoing calls to family, neighbours or a call centre. Modern pendant alarms are smaller than earlier versions, so they are less stigmatising. Pendant alarms link to a base station within the person's home 9, and some models are styled to look like standard phone or modem units 10, 11.



Fall detector 12, 13. These take a variety of forms, and depending on the model they can be attached to clothes or a belt, carried in a pouch or worn around the person's wrist. The detector is activated if the person falls, and is most effective when worn at waist level. In order to be useful it must be worn whenever the person is active (it can be taken off at bedtime). It will automatically detect a fall, although it may not register a slip or slide on to the floor. If it is not returned to a vertical position during a short pre-alarm period, an emergency alarm will be activated.

Newer models include an 'accelerometer' feature which can detect the speed of a change in position, as well as the angle. These dramatically reduce possible false alarms caused by normal movement, if for instance the detector has been dropped. The settings can be adjusted to suit the person's size, shape, and patterns of falls.

Some detectors use the accelerometer feature to deactivate the alarm when the person moves. This is based on the assumption that if they are moving, they are conscious and able to use a manual alert or call for help. This feature is primarily designed to reduce the incidence of false alarms, but there is an obvious problem if the movement that deactivates the alarm turns out to be instinctive or inadvertent.

Battery life on some models is short and it is important that regular testing takes place. For individuals with falls risk and memory impairment, this often requires intensive input from the assessor, who typically works alongside the person and their carers. It is also very important that carers understand how the detector works, along with its limitations.

Good initial monitoring and review by the assessor is thus central to ensuring the effectiveness of the chosen device. This also provides an opportunity to educate the person about the detector and explain that they may experience some false alarms initially, as well as providing reassurance that this is not a problem.

Battery life on some models of fall detector is short, and it is important that regular testing takes place.



Bed and chair occupancy sensors

Many falls occur when a person is getting up from their bed or chair. There may be medical reasons for this, or it may be because it is night time and dark. A range of sensors is available which can reduce these risks. These provide early warning of potential falls by sounding an alarm if the user leaves their bed or chair and does not return within a predetermined period. They can also be programmed to switch on or dim lights, helping an individual to find their way to and from bed easily. Different settings enable them to alert a carer within the same property and/or the call monitoring centre. The equipment shown in **14** links to a bed or chair sensor pad (not illustrated), triggering an alarm notifying a caregiver that the person has got out of bed or up from their chair. The infrared monitor shown on the right of the picture can be used instead of (or in addition to) sensor pads to detect movement when the person gets out of bed or passes through a doorway.

Bed sensors are particularly useful for those who live alone but get up during the night and are at risk of falling. Various versions are available, including a model that can play a recorded message to advise the person that assistance is on the way.

Occasionally, a floor pressure mat at the bedside **15** might be used to alert a carer that a very frail person has got up. However, a very careful risk assessment needs to be carried out before a floor pressure mat is introduced as these can cause a hazard in themselves. If they are used they must feature a low pile and not increase any risk of slipping or tripping.

Sensors such as these do not prevent falls in themselves, but they can significantly reduce the anxiety older people have about falling, and they have the potential to promote a quick response. They also provide carers with reassurance that they will be alerted when the person requires assistance, thereby ensuring they will not lie on the floor undiscovered for a long time.



Bed and chair occupancy sensors do not prevent falls in themselves, but they can significantly reduce the anxiety older people have about falling.

A safer environment

Older people or people with disabilities may not be able to move as quickly as they need to in order to protect themselves in the event of fire or a gas leak. Equally, a very cold environment (for instance as a result of the heating not being switched on) may cause hypothermia, which can in turn lead to fainting. Low temperature can also slow both physical and mental function, which in itself will increase the risk of a fall. As a result, a range of telehealthcare devices should be considered to enhance the safety of a person at risk of falling. These should be combined with simple improvements to the home, such as the installation of handrails and grab rails.

Temperature monitor 16, 17. This detects extremes of temperature (hot or cold) in the room where it is placed. The high temperature function can detect a fire or if the cooker has been left on. The low alert can flag up a risk of hypothermia or indicate if a door has been left open.

Flood detector 18 19 20. This is activated when the floor becomes wet. A range of overflow devices is also available, including plugs that will prevent overflows or floods if, for example, a bath is left running by mistake.

Smoke detector 21, 22. This will pick up even small amounts of smoke, although it can be very sensitive to sources of smoke such as burning toast or candles. It needs to be positioned carefully to avoid false alarms.

Carbon monoxide detector 23. This can either alert a call centre or automatically shut off the gas supply.

Door contact 24, 25. This two-part device is fitted to the door and its frame. Staff or a call centre are alerted when the door is not closed or if it is opened and shut frequently.



Safe door entry system 26. This enables the user to see or hear who is outside before they open the door. Some systems are connected to a television so that the person can see the caller before they decide to open the door. Others can record conversations that take place before the door is opened.

Passive infrared (PIR) beam 27, 28. This detects movement or lack of movement. It can activate an alarm if there has been no movement when there should be – for example if someone is unable to get out of bed or out of their chair. Alternatively it can be activated if there is movement during the night when this is not expected.

Medication reminders use an alarm as a prompt and can help ensure that medication is taken at the same time every day 29. Some models also dispense the medication 30 and can be linked to a tipping device 31 to assist those who may lack the manual dexterity to tip the medication out of the dispenser. Medication reminders are valuable for people who need to take different types of medication at different times of the day, and when over- or under-medication can increase the risk of falls. It is important that the person is not frightened or upset by the sudden noise when the alarm goes off, and if the reminder device is in their house, they need to be at home when it is activated in order for it to be effective.

Enuresis sensor 32. This is a thin sheet that is placed on the bed between the mattress and the sheet. It activates an alarm if the person wets the bed, although it can also be set off by excessive sweating. This can indirectly reduce the risk of falling – for example if someone who is wet and uncomfortable tries to get out of bed when they need assistance.

Seizure monitor 33. This detects seizures by monitoring for movement where it is placed/worn. Monitors are not always effective in detecting minor seizures, although they can prevent the need for staff or parents to check the person so frequently overnight.

Mobile phone. This can act as a means of communication with carers and family. To be effective it needs to be charged and in credit. A GPS-enabled mobile phone, watch, shoes or other device can be used to locate a person who has left their home but not arrived at their destination. Some fall detectors are now available as smart phones applications ('apps').



Case examples

The following anonymised case examples have been provided by staff from falls services in Scotland. They are designed to illustrate the value of various kinds of telehealthcare equipment in reducing risk and anxiety, as well as ensuring that help can be summoned in the event of a fall. In addition, they illustrate that equipment and associated services need to be reviewed regularly. In some cases a review may lead to a change in or withdrawal of equipment as the person's situation changes.

Mrs A

Mrs A is 89 and lives in a private-sector sheltered housing unit. She has a call pendant, but in order to use it she must be conscious and alert (in the event of a fall) so that she can press the pendant to gain assistance.

Mrs A's medical records show that she has had several falls within a six-month period. On one occasion she had a severe blackout which caused her to fall. When she recovered consciousness, she realised she had been lying on her living room floor all night. The last thing she could recall was seeing her carers leave her home at around 10.45pm. When she checked the time it was 5am the following day.

This fall resulted in Mrs A being admitted to hospital, and before she was discharged the hospital staff discussed their concerns for her wellbeing with her. They recommended that she move into a nursing home, but she pleaded with them to let her go home and see how she got on.

It was agreed that she should try out a fall detector at home. This needed to be set correctly and Mrs A was given information on how to make adjustments, along with an explanation that the detector would automatically call the control room for help if she were to have another blackout.

Regular visits were made to Mrs A over the following few weeks to check how she was coping. She said she was pleased that she had not had any further blackouts and was feeling much happier. The fall detector had given her the peace of mind that if she did fall again she would not be left on the floor for hours. The thought of this had previously filled her with dread. She also said that the detector gave her family peace of mind as they did not live locally and worried about her.

Mrs K

Mrs K is 53 and has multiple sclerosis. She lives alone. Her condition is progressing slowly, but she has reached a stage where her walking and transferring is becoming uncertain. She is awaiting a tenancy in a house which is wheelchair accessible. In the meantime, she has been provided with a pendant alarm which will enable her to call for assistance if she should fall. This also provides reassurance to her and her immediate family.

Mrs S

Mrs S (aged 56) was referred for assessment because she had fallen and because she had a neurological condition which caused severe problems with pain and balance. Her home was already fitted with community alarm equipment and this included a pendant which she could press for assistance if she fell. Mrs S had previously called for assistance on two occasions when she had fallen. A visit was arranged so that her risk of further falls could be discussed and her environment evaluated.

Mrs S confided that she had been feeling very low and had been prescribed antidepressants by her GP. She had taken an overdose of her medication as she felt she could no longer put up with the way she was feeling about her illness.

Mrs S said that she had recently woken up to find herself lying on the floor. She initially thought she was in her bed, but when she awoke fully she realised that she must have experienced a blackout. She had been on the floor for over five hours before regaining consciousness.

Mrs S said she couldn't go on like this as she was terrified of collapsing and having a severe injury or dying and nobody finding her for days. She was asked if she would be willing to try a fall detector which would automatically send a call to the control room if she were to collapse on the floor. She was slightly reluctant as she had tried a different fall detector in the past and couldn't cope with the large number of false alarms it had caused. When the various settings which could be adjusted were explained, she agreed she would give it a try, and it was supplied the next day.

On returning to check the settings and make adjustments, Mrs S said the detector had been great. She had worn it to bed and felt it was much better than the previous fall detector she had used.

Further visits were made to Mrs S to check how she was coping. After a few weeks she reported that the detector had 'changed her life'. She now had the security and peace of mind that if anything was to happen to her she would get help. As a result she didn't feel alone any more. Her mood had lifted and her GP, family and friends had all noticed a great change in her. Mrs S said she was now in discussions with her GP about beginning to reduce her antidepressant medication. She was getting out more with the help of her sister, and this was all down to having greater peace of mind.

Mr J

Mr J is 83 and lives at home alone. He has a degree of memory impairment, but continues to maintain an independent lifestyle. However, last winter he fell in his back garden. Although he managed to alert a neighbour, his son was concerned that he may fall again. With his consent, a door sensor was fitted so that his son would know if he left the house and did not return within a certain time. This will not prevent him from going out and falling, but it will reduce the risk of him lying on the ground for a long time after a fall. It should reduce the time he has to wait for help, and it has reduced both his and his son's anxiety.

Mrs L

Mrs L is 79 and has high blood pressure. She lives at home with her unmarried son. He works during the day and is anxious about his mother when he is not there, particularly as she still enjoys cooking his dinner for when he comes home. In addition to a pull cord alarm, a temperature monitor and carbon monoxide detector were installed. One day Mrs L fainted while cooking, leaving pots on the stove. The temperature monitor detected the increased heat and sent an alert to the monitoring centre so that assistance could be organised.

Mrs P

Mrs P is 82 and lives alone in a bungalow. She has hypertension, polymyalgia rheumatica and poor cognition (although she scored 27/30 on the mini mental state examination). She has had one fall in the six-month period prior to the introduction of telehealthcare equipment. During the period between being supplied with the equipment and a review, Mrs P was admitted to hospital on one occasion and also required three GP visits. However, she had not used the telehealthcare equipment to call for assistance.

Mrs P's friend is also her next of kin and key holder. She had suggested that Mrs P was developing dementia and was keen for her to continue to have access to the telehealthcare equipment. During her review, it became apparent that Mrs P was experiencing cognitive impairment. She had difficulty answering some of the questions she was asked, such as 'Which piece of equipment did you find most useful?'

Mrs P had been provided with an alarm unit, a fall detector, a pendant and two pull cords. She was wearing the pendant at the time of the review but wanted to return the fall detector as she did not understand how to use it.

Despite saying that she often forgot to wear her pendant alarm, Mrs P was able to immediately point out where the two pull cords were located (one in the hall and one by the shower). Owing to the layout of her house, in which all the rooms led off the hall, Mrs P realised that if she fell in any room, she would only need to reach the hall to call for assistance. She felt that this suited her situation well, as she was aware that she did not wear her pendant reliably. Mrs P wished to keep the pendant and pull cords but wanted to return the fall detector. This was agreed at the conclusion of the review.

Mr B

Mr B is 80 and lives with his wife in a two-storey house they have shared for a number of years. They have family who visit when they can. Mr B is aware that he has memory problems, although he scored 26/30 on MMSE. He has dementia and asthma, and reported one fall in the six-month period prior to having telehealthcare equipment installed. At that stage he was supplied with an alarm unit, a pendant alarm and a fall detector. In the period subsequent to this he did not experience any falls and did not need to use his pendant alarm.

When his review took place he was wearing both the pendant and fall detector. Mr B said that wearing the pendant served as a reminder that he was at risk of falls and encouraged him to be cautious when moving around the house. He found the fall detector uncomfortable because when it was attached to his belt it dug into him. He had also triggered the alarm unintentionally. Mr B's wife explained that he was only left on his own for short periods when she went shopping, and her husband 'wouldn't cope' with communicating with the community alarm service if he had a fall. Mr B was keen to keep using the pendant alarm but wanted to return the fall detector. This was agreed.

Mrs C

Mrs C is 75 and lives alone in a ground floor flat. She has no family nearby, but her neighbours are very supportive. She has a history of falls and fractures, including two falls in the six-month period prior to the provision of telehealthcare equipment. The most recent of these required admission to A&E.

Mrs C was provided with an alarm unit and pendant alarm. During the period prior to her review she made three visits to her GP but had no falls and didn't need to contact the community alarm service for assistance.

Mrs C felt that the pendant alarm was an extremely useful piece of equipment which gave her a great sense of security. It was particularly valuable because she lived alone and could not readily summon assistance without it. However, she reported that she kept her pendant 'hanging by the bed' at all times. The project coordinator suggested that it would be more beneficial if she wore it round her neck. This meant it would be available in case she had a fall anywhere in the house, not just in her bedroom. Despite her appreciation of the pendant, Mrs C had not realised that it was preferable to wear it at all times in case of an emergency.

Mr M

Mr M is 87 and has dementia. He lives in a cottage with his wife, who is his main carer and who also has health and mobility problems. The couple are desperate to remain living independently in their own home and are reluctant to accept any outside support.

The community alarm falls screener identified that Mr M had experienced six falls in the previous six months so arranged a falls assessment for him and his wife at home.

During her visit, she discovered that whilst Mr and Mrs M both had pendant alarms, they were frequently not wearing them, and at the time of the visit both alarms were missing. As a result, she arranged for Mr M to be supplied with a wrist alarm which he didn't need to remove at night. A smoke, heat and flood detector was also installed as the couple had had a previous incident where a kitchen fire was narrowly avoided.

The cottage was very cluttered with a number of trip hazards. The falls screener offered them advice regarding these, and with the help of their carer the hazards were removed. Mr M was also very unsteady on his feet and complained of dizziness on rising from his chair. He was referred to the community physiotherapist service and also the Perth Falls Clinic to address his dizziness and mobility issues.

Service examples

Many telehealthcare services in Scotland are enhancing their role in falls prevention and management and developing strong links with NHS assessment and rehabilitation services. In areas such as Perth & Kinross and South Ayrshire, specific pilot projects testing new techniques or screening tools have been developed. These are being coordinated and the findings disseminated through the Joint Improvement Team²⁴.

The Falkirk/Forth Valley Falls Management Project* was initiated in 2002. It is a partnership between the local authority mobile emergency care service (MECS) and NHS Forth Valley. A key feature is the effort to coordinate the response and information gathered by the various workers in both social work and health services who have contact with people who have fallen or are at risk of falling. From the outset, the project aimed to reduce the number of falls being experienced and provide early and appropriate education, intervention and holistic assessment. The service has now developed to the point where:

- falls management clinics offer holistic assessments
- a jointly agreed falls risk assessment form has been produced
- fall detectors are offered if appropriate and necessary, along with other equipment indicated as a result of assessments
- MECS wardens provide an emergency response to people who fall at home; they are trained in first aid, moving and handling, and assessment
- service user falls are closely monitored by MECS. Information is shared with GPs and other health services. Visits are made to people who fall twice within six months, and there can be direct referral to the falls management clinic
- since 2002, 6,300 MECS service users have been given information and advice about falls and falls prevention. There has been a response to over 14,000 falls
- links are now being made with other services that have a responsibility to help people who have fallen, notably the Scottish Ambulance Service, and the Central Scotland Fire and Rescue Service

Issues for carers and for care and support staff

The carers or family of a person at risk of falling will not necessarily be immediately supportive of the use of technology for their relative, or be willing to monitor its use. They may be exhausted from the stress of worrying about the possibility of a fall, and when it actually happens they may begin to perceive residential or hospital care as being the safest and then the only solution. Serious tensions may arise between the person and their carer as a result of this. Likewise, a carer who is concerned about their partner or spouse falling in the

* For further information contact Linda Saunders (linda.macpherson@falkirk.gov.uk).

night may have experienced broken sleep for a long time – perhaps years – and may reject any solution short of residential care.

For these and other reasons, carers may react negatively to the suggestion of telehealthcare, which may also be seen as the precursor of a reduction in other services, especially staff support. These views must be taken into account before bringing any new technology into the home. Clear, honest explanation, and comprehensive information, are essential. A thorough discussion of the assessment, along with the risk factors and the range of measures which could be taken to reduce these (including telehealthcare), will be necessary.

Good planning at an early stage can avoid the need for crisis decisions being made if a bad fall occurs that necessitates hospital admission. To be fully effective, telehealthcare within or outside the home needs to be part of a long-term care package that is regularly reviewed and incorporates and acknowledges the needs of the carer, as well as the person at risk of falling.

Carers and care staff also need appropriate training and support in the use of telehealthcare. Although use of mobile phones and the internet is widespread, it should not automatically be assumed that staff or family members will be familiar with them. Staff may have no desire to use these technologies themselves, so may have difficulty incorporating them into their daily work. What may be seen as a reluctance to support a person may in reality be due to feelings of uncertainty about the technology, and these feelings need to be acknowledged. These issues can usually be overcome by support and training. In some cases the carer or staff member may learn alongside the person, which can prove beneficial for both. Training and support for staff are essential, and should form part of personal development plans which will ensure that this area of work is recognised and acknowledged. Additionally, it is important that more than one staff or family member is familiar with any technology that is introduced. Discussing these issues regularly at reviews, or team meetings, will mean that staff and carers are familiar with the challenges they may encounter, rather than becoming stressed when they face a problem or receive a call. All these issues are explored in more detail in *A weight off my mind*, a report²⁵ which explores the impact and potential benefits of telecare for unpaid carers in Scotland.

Good planning at an early stage can avoid the need for crisis decisions being made if a bad fall occurs that necessitates hospital admission.

5: Principles, rights and ethics

Chapter 3 described the importance of carrying out a careful needs and risk assessment before introducing telehealthcare. However, while good assessment will ensure that the use of telehealthcare is person-centred and needs-led, it will not necessarily answer the question of whether telehealthcare is 'right' for an individual.

As an example, consider a person who is in the early stages of dementia. The initial assessment process may indicate that some changes to her furnishings and floor coverings, combined with a few minor adaptations and the provision of a wrist-watch style fall detector, could reduce the risks and reassure her family. Should she experience further falls, the detector will alert her carers and a control centre so that they can organise help.

But she doesn't want any of this. She wants her home to stay as it has always been. She doesn't want to wear devices that signal a loss of independence, so she refuses. Is this a sign of confusion? Should she be 'persuaded'? Is she still entitled to choose? These are ethical questions.

It may be difficult to comprehensively establish the needs and risks of a person who has a history of falling, perhaps because they also have dementia, or because they don't want to acknowledge that falls are a problem. Alternatively, they may think a needs assessment is an inevitable prelude to residential care. To carry out an effective assessment, a system like Just Checking²⁶ might be introduced to their home on a temporary basis. This will provide comprehensive data on the person's movements, routines, and the risks they encounter when moving about, sleeping and toileting. Although the resulting assessment will be very well-informed, this does not necessarily justify the invasion of privacy that is also involved. Similar dilemmas arise with the use of systems such as Betavista which allow control centre operators to see the person in their own home (albeit when an alert is triggered), as well as talk to them on a phone line.

The purpose of this chapter is to briefly describe an ethical approach to telehealthcare, summarise some principles which need to be considered when decisions are being made, signpost relevant legislation and provide some hints for practice. It is important to stress four things at the outset:

- each person's needs, choices and beliefs must be a fundamental consideration in any decision
- there are few absolute 'rights and wrongs' which can be universally applied to every situation
- ethical issues are not unique to telehealthcare. Indeed, the principles, values and legal obligations discussed here apply to other care and support settings
- no one acts in a value-free or value-neutral way – we all have our value positions. The important issue is understanding these, articulating them as necessary (particularly to service users and carers) and

A person who has a history of falling may not want to acknowledge that falls are a problem.

understanding and thinking through any conflict that may emerge with the values of others, particularly service users and carers

Personal value systems

We all take up value positions and have opinions on issues like the smoking ban, how children should be disciplined and capital punishment. Some people consider these issues to be 'common sense' or 'obvious', but in practice they are complex. Our personal values are influenced by the way we were brought up, our education, the apparent values of our community and by our life experiences. For those working in care and support services, there are also our professional values. These are often expressed through codes of practice²⁷ and feature prominently in our professional education at every level. As a result we learn – and try to integrate into our practice – core values such as a commitment to confidentiality, treating people with respect, maintaining dignity and individuality, and challenging racism, discrimination and injustice.

It is important that practitioners are aware of these values, and how they come to be part of their own value system. It is also important to appreciate that they may not always be shared by individual service users and carers, with the resultant need to resolve conflicts that arise from different value positions.

Principles

Some writers have developed statements of principles, or ethical theories, which can help ensure that the use of telehealthcare is ethically sound. For example, Bjørneby et al (1999)²⁸ have proposed these principles:

- **autonomy** – people should be able to decide what they want to happen or be done to them
- **beneficence** – we should try to do good to the people we care for
- **non-maleficence** – we should try to avoid doing people harm
- **justice** – people should be treated fairly and equally

In addition to these principles, Bjørneby suggests that the perspectives and views of all those involved in the service should be sought in relation to both its implementation and the likely impact of its non-implementation.

Kemshall and Pritchard (1997)²⁹ highlight the values and rights which they believe underpin community health and social care services. These include:

- a commitment to ensuring that all users and carers enjoy the same rights of citizenship as everyone else in the community, with equal access to service provision, irrespective of gender, race or disability
- a respect for the independence of individuals and their right to self-determination, including taking risks, and minimising any restraint on that freedom of action
- a regard for the privacy of the individual, intruding no more than necessary to achieve the agreed purpose
- respect for the dignity and individuality of every user and carer
- maximising individual choice in the type of services on offer and the way in which those services are delivered

When making decisions about telehealthcare, maintaining respect for the independence of individuals and their right to self-determination – including taking risks – is essential.

- a responsibility to provide services in a way that promotes the realisation of an individual's aspirations and abilities in all aspects of daily life

These values and principles provide the basis for rules of practice that will ensure an ethical approach.

In work commissioned by the Social Care Institute for Excellence, the Welsh Centre for Learning Disabilities identified similar principles and ethical issues and described a series of 'practice points' in the assessment, consent, installation and review phases of a telecare service³⁰.

The law

In Scotland, three important Acts of Parliament have been passed since 2000: the Adults with Incapacity (Scotland) Act 2000; the Mental Health (Care and Treatment) (Scotland) Act 2003; and the Adult Support and Protection (Scotland) Act 2007³¹. In addition to sharing a common purpose of protecting the rights of vulnerable people, these uphold a common set of principles:

- that any intervention must be intended to provide a benefit to the person which could not be reasonably obtained without that intervention
- that this is the 'least restrictive' option available
- that the views of the person are considered, along with those of significant others, like carers and family

The Adults with Incapacity Act is particularly relevant to this book because of its focus on the rights of people with significantly impaired capacity to make decisions.

Capacity and consent

There will be many occasions when the introduction of telehealthcare raises issues of capacity and consent. The assessment process may indicate the presence of significant risk that telehealthcare (in conjunction with other services) has the potential to reduce. Despite this, the person may refuse the service or be reluctant to accept it. This might be because they disagree with the perception of the risk and/or want to retain the right to choose the way they live.

Where decisions are made on behalf of an individual who lacks the capacity to make choices for themselves, the course of action should be time-limited, regularly reviewed and limited to the particular services and decisions under consideration. Such decisions should never be considered as final or permanent.

Policy and procedures

Individual agencies will have policies, procedures and guidelines in place which ensure that staff remain within the law when delivering services – including telehealthcare services. Implicit in these are the values of the agency, and of the community that it seeks to serve. For instance there will be commitments to equal opportunity, privacy, dignity and confidentiality, alongside procedural commitments to legality, cost-effectiveness and quality.

It is vital that practitioners are aware of these procedures and follow them. In the context of this chapter, practitioners should also be alert to conflicts

There will be many occasions when the introduction of telehealthcare raises issues of capacity and consent.

between the values of users and carers and the values of their agency. These issues are often encountered in the area of risk and personal safety. Agencies have a duty of care, and in some cases their policies and procedures may conflict with the aspirations or expectations of the user, or their carer. For instance, procedures may prioritise the reduction of risk, as distinct from the freedom of someone to take risks and to make their own decisions. Practitioners need to be alert to these conflicts, and to make them explicit to users, carers and their own agency management. They must also ensure that the resolution of the conflict is recorded accurately and transparently.

Practice guidance

In summary, the following guidance is suggested:

- be aware of your own personal and professional value systems and how these might conflict with the person you are working with and their carers
- be aware of the procedures of your agency, particularly those which are designed to protect the person's right to choice, dignity, privacy and confidentiality
- ascertain as fully as possible the views of the person, their carers and other staff working with them. Do you understand what they are saying to you?
- are there issues of capacity to consent? If so, what are the legal issues around overriding their right to choice and consent?
- in what ways might the telehealthcare solution limit this person's freedoms and rights? Is there an alternative which does not challenge their right to choose?
- how are the decisions to be made recorded? Has a record been provided to everyone who should have one? When is the decision to be reviewed?

Practitioners need to be alert to conflicts between the values of users and carers and the values of their agency.

6: Training programme

This section includes content and a suggested timetable for a one-day training programme on how telehealthcare can reduce risks for and contribute to the care and support of people prone to falling. It may also provide a basis for a longer programme for specialist assessors or ‘champions’ if combined with ‘shadowing’ experiences and visits to a control centre, response team, and contact with service users already experienced in telehealthcare. Similarly, it may be of value to course leaders of undergraduate programmes for social workers, occupational therapists and community nurses.

It is an outline programme which skilled trainers will need to adapt to the particular training needs and circumstances of local groups.

Aim

To support participants in the development of their knowledge, skills and understanding required to introduce telehealthcare into individualised care packages.

Objectives

- to increase knowledge of the size and scope of the problem of falls; potential consequences of falls; the risk factors that can lead to falls; and what interventions can reduce falls risk
- to learn how telehealthcare can contribute to the support of people at risk of falling, and their carers
- to develop practice in needs and risk assessment, and care planning, so as to maximise the benefits of telehealthcare
- to increase knowledge of the legal and ethical framework for good practice
- to understand the wider policy and strategic context for telehealthcare

Timetable

9.00 Welcome and introductions

- domestic arrangements
- discuss agenda and clarify expectations of the course. Refer to the aims and objectives to confirm what the course can and cannot provide. Invite participants to discuss, briefly, with each other, their current knowledge and understanding of falls, their perceptions and anxieties about technology, their expectations of the day, and their individual training needs

9.30 Falls are everyone's business!

Introduce the topic of falls, particularly amongst older people. Provide a definition of a fall. Outline how common falls are, but that falls are not an inevitable consequence of getting older. Provide some key facts to emphasise the size and scope of the problem, such as:

- the percentage of older people who fall each year
- the potential devastating effects of hip fracture both to the individual and their carers, and the fact that falls are a major contributing factor to many care home admissions
- the cost to the NHS of treating fractures, and the number of bed days taken up by older people who fall

Explain that falls prevention is everyone's business – anyone who works with older people, in particular, has an important role to play, from providing simple advice on footwear, to carrying out risk assessment and prevention measures.

9.45 What is telehealthcare?

This could be a 'teaching' session with a presentation and handout based on the definitions provided in the introduction to this book.

Key learning points are:

- the meaning of terms such as telecare, telehealth and telehealthcare
- the lack of commonly accepted standard definitions, and the extent to which terms are interchangeable, and changing
- the speed with which technology is developing in all areas of our lives
- the effect of this on service user and carer expectations

Gather together any thoughts and initial reactions at this stage without looking for conclusive ideas. Some of the definitions may be new to participants, and time is available to ask questions about these throughout the day. Reassure participants that they will have the opportunity to apply these to practice later.

10.00 Telehealthcare and falls

Dividing the participants into groups for discussion will provide a change from presentations and lectures, and will help them to internalise the information provided. Small groups could consider:

- the potential impact on people of experiencing a fall, including the effect on their independence and quality of life (consider psychological consequences as well as the physical ones)
- risk factors that can cause older people living at home to fall
- measures that can help to reduce falls (and who might provide what)

Following the initial discussion, encourage the groups to begin exploring ways in which telehealthcare can support people at risk of falling, including the following:

- enabling a fast response to falls to prevent the consequences of a long time spent lying on the floor and/or ensuring further urgent care is accessed when required
- offering reassurance to the person and their carers
- identifying falls risks that could be reduced (working with the wider team where necessary)
- identifying changes in a person's pattern of falling which might indicate the need for a review or reassessment

Other key learning points might include:

- being aware that the successful introduction of telehealthcare depends on understanding all the needs and risks – not simply the person's immediate history of falling
- being able to identify and explain risks (including environmental risks) that can be reduced by common-sense changes
- being able to recognise the feelings of anxiety, and fears for the future, that someone who has fallen may have, and that may lead them to understate the risks and number of falls
- being open to new and changing ways of providing support
- stressing the need to consider telehealthcare in the context of a comprehensive falls prevention and management programme

11.00 Break

11.15 How can telehealthcare help people who are prone to falling?

This should be an opportunity for participants to see pictures of, and, if possible, actually touch and feel equipment. It is important to explain the kind of support needs for which pieces of equipment may be useful, and to talk through examples of equipment which may be in development but not yet available.

Consider equipment that:

- the person can use to summon help if they have fallen
- can alert carers and support staff to a fall when the person is unable to summon help themselves
- can highlight to carers and support staff that the person is at risk of falling
- can reduce the person's risk of falls and/or other harm (particularly if they have mobility problems)

Local providers and suppliers may offer to put on a display of equipment, at no charge. If there is a local 'smart house' it may be possible to hold the training session there – or to organise a visit at the end of the day or during the lunch break.

Alternatively, ask the group to look at the illustrations of equipment in this book and share their ideas about each item's uses and limitations. Participants may have additional valid suggestions about uses and limitations based on their own experiences. Ask the group to split into pairs or small groups and think

about a person they know who may benefit from some of these adaptations or interventions, along with someone who would be unlikely to benefit from them. It is also important that they think through the implications, for example:

- what is the need that is to be met (the importance of careful assessment; avoiding simplistic solutions; not 'just giving out bits of kit')
- the different perspectives of the service user, their family and support staff
- differing attitudes to risk
- how telehealthcare can supplement other kinds of support but is not intended to replace them
- the importance of maximising levels of independence and retaining personal skills
- promoting proactive self-management of long-term health conditions or disabilities
- encouraging/enabling individuals to remain in their own homes/communities for as long as is safely possible
- reducing unnecessary movement to alternative forms of accommodation, such as nursing homes, care homes and hospitals
- fostering a feeling of security for individuals and their families
- improving quality of life
- providing greater choice

Ideally, participants will share their own experience and cases with colleagues. This book also contains some case examples which can be used as an alternative, or in conjunction with participants' own experience. The trainer will need to decide how best to use some or all of these – perhaps giving the initial scenario first, then comparing the solution suggested in the book with the group-members' own ideas.

13.00 Lunch

13.45 The importance of good assessment: the use of screening tools

Bring participants back together as a single group and compare the ideas that emerged in the previous session. Encourage debate about how telehealthcare contributed to the support of the individuals in the case examples in the following ways:

- draw out the importance of good assessment. Refer to the section on assessment in this book. If necessary, develop a handout or use an example of a local assessment or multifactorial screening tool
- make sure risk is considered, as well as need
- highlight the differing concerns and benefits as seen from different points of view
- bring any difficult issues into the open, such as someone understating the risk or how carer concerns should be addressed
- highlight what the problem is and who the telehealthcare is intended for. Are there consent issues, or differing perspectives on risk, need, capacity or consent?

14.15 Telehealthcare may be the solution ... but is it 'right'?

This last question may provide an opportunity to discuss with participants the rights and wrongs of using telehealthcare, looked at from their own perspective, as well as their employer's and professional perspectives. Chapters 3 (Assessment) and 5 (Principles, rights and ethics) may provide the basis for a short introductory talk. Alternatively, this could be an interactive session in which the following kinds of questions are posed:

- telehealthcare can involve the monitoring of people's private lives. Is that 'right'?
- some equipment restricts people's freedom to do as they want or go where they want in order to 'protect' them. What is the right balance between risk and protection and how do we achieve it?
- telehealthcare can be used to support a 'normal' lifestyle – getting up in the morning, going out during the day and going to bed at night. Is telehealthcare being used to 'impose' a conventional lifestyle?

Discuss what permission means where there is significant cognitive impairment or capacity issues and talk through what the law dictates in this area. These issues can be discussed in the context of the case examples from the previous session.

Participants need to be clear about the legal constraints on this (and any other) part of their support service. They have a responsibility to make decisions that are both ethically defensible and legal. An approach based on individual assessed needs will always present ethical dilemmas which need to be resolved.

15.00 Policies, procedures, and strategy to support the use of telehealthcare

This session provides an opportunity for participants to explore and gain a better understanding of local policy and procedures. It should include discussion of local assessment tools to ensure that participants understand when and how telehealthcare can be introduced into the assessment process. Local procedures for accessing telehealthcare, as well as for installation, testing and responding to call-outs, should be discussed and explained, along with charging policies and budgets.

It may also be useful to discuss local strategy. How does the use of telehealthcare fit with local joint strategies for people at risk of falling? Where does telehealthcare fit within local pathways such as those suggested in *Up and about*³². If time is available, it will be useful to look at the national strategy too and discuss how telehealthcare can contribute to national policy goals such as Shifting the Balance of Care. (Resources are available on the National Telecare Development Programme website – www.jitscotland.org.uk/action-areas/telecare-in-scotland/)

16 00 Conclusions and evaluation

Additional resources

For further information about telehealthcare and the National Telehealth Development Programme in Scotland, please contact the Joint Improvement Team via their website: <http://www.jitscotland.org.uk/action-areas/telecare-in-scotland/>

Other websites

Telehealthcare in Scotland (NHS Education for Scotland):

<http://www.knowledge.scot.nhs.uk/telehealthcare.aspx>

The Scottish Online Falls Community: <http://www.fallscommunity.scot.nhs.uk>

The Prevention of Falls Network Europe: <http://www.profane.eu.org/>

Information and general advice from the Disabled Living Foundation:

<http://www.livingmadeeasy.org.uk/telecare-167/>

Consumer reports on telecare equipment:

http://www.ricability.org.uk/consumer_reports/at_home/

Information on assistive technology for people with dementia:

<http://www.atdementia.org.uk>

Alvolution: <http://www.alvolution.co.uk>. Alvolution's technology finder is an independent, unbiased, comprehensive product comparison website, developed by health and social care commissioners to help with the selection of assisted living technologies for their service users and patients.

Telecare Services Association (TSA): <http://www.telecare.org.uk>

Social Care Institute for Excellence – Dementia Gateway. This section of the website looks at the use of technology:

<http://www.scie.org.uk/publications/dementia/environment/assistive.asp>

Centre for Usable Home Technology: <http://www.cuhtec.org.uk/>

Centre for Accessible Environments: <http://www.cae.org.uk/>

Enable: <http://www.enableproject.org/>

DVDs

Telecare – supporting Scotland: a different approach. DVD which includes seven 'digital stories' illustrating, in the words of users and carers, the impact of telecare. Available through <http://www.jitscotland.org.uk/action-areas/telecare-in-scotland/>

Telecare for unpaid carers: 'A Weight off my Mind', www.carersscotland.org

Telehealth in Action. Scottish Centre for Telehealth:

<http://www.sct.scot.nhs.uk>

Publications

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For older people and carers

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*All websites accessed 1 March 2011

Supplier contact details

The images of equipment featured in this book represent a small subsection of the range currently available. The contact details below have been included to assist purchasers in assessing what is available from whom, but in many cases the same device is available from more than one supplier. The publishers in no way endorse any particular supplier or product. The lack of inclusion of a particular product does not imply that it is inferior to any device featured. Purchasers are responsible for researching the full range of products available and reaching their own conclusions about what is most suitable for them or their clients.

<p>12 16 18 24 28 Chubb Community Care Shadsworth Road Blackburn BB1 2PR Tel: 01254 688774 www.chubbcommunitycare.co.uk</p>	<p>1 25 Just Checking Ltd The Mill Brome Hall Lane Lapworth B94 5RB Tel: 01564 741822 www.justchecking.co.uk</p>
<p>8 29 30 31 Pivotell Ltd PO Box 108 Saffron Walden CB11 4WX Tel: 01799 550979 www.pivotell.co.uk</p>	<p>3 4 7 9 13 17 20 23 26 32 33 Tunstall Healthcare (UK) Ltd Whitley Lodge Whitley Bridge Yorkshire DN14 0HR Tel: 01977 661234 www.tunstall.co.uk</p>
<p>14 15 Turun UK Ltd Eden House 59 Fulham High Street London SW6 3JJ Tel: 0500 500667 www.turun.co.uk</p>	<p>2 5 6 10 11 19 21 22 27 Tynetec Ltd Cowley Road Blyth Riverside Business Park Blyth NE24 5TF Tel: 01670 352371 www.tynetec.co.uk</p>

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Telehealthcare and falls

Using telehealthcare effectively in
the support of people at risk of falling

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