

# Exploration of information needs and development of resources to inform and support those at risk of falling

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**Title:** Exploration of information needs and development of resources to inform and support those at risk of falling

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**Abstract**

**BACKGROUND:** There is a lack of information surrounding assistive technology in general, but in particular, surrounding fall detectors and their use. This paper describes the results specifically pertaining to access to and provision of information regarding fall detectors which arose from a previous project exploring the use of fall detectors in the West Midlands.

**OBJECTIVE:** To develop a range of resources to help inform and support people at risk of falling, based upon the findings of a previous project which aimed to evaluate the use of fall detectors in the West Midlands

**METHODS:** A combination of focus groups and user interviews were used to explore the successful and unsuccessful use of fall detectors across the West Midlands region in the UK. A range of resources were iteratively developed based upon the findings of these user interviews.

**RESULTS:** There was a lack of information for both the public and health and social care professionals with regards to the availability, advantages, disadvantages, indication and contra-indications of fall detectors, as well as lack of wider information regarding falls.

**CONCLUSIONS:** The project developed a range of information resources based upon the project findings, which have been so far well-received by the public and health and social care professionals. Further research must be conducted to ascertain full impact.

**Keywords**

Assistive technology, older people, fall detectors, telecare, information provision

# **Exploration of information needs and development of resources to inform and support those at risk of falling**

## **1. Introduction**

The term ‘Assistive Technology’ (AT) covers a range of devices and services, including but not limited to: walking aids and adaptations, community (pendant) alarms, movement and fall detectors, reminder devices for people with Mild Cognitive Impairment (MCI), communication aids, and technologies for disease and long-term health condition monitoring (otherwise known as telecare or telehealth). Broadly, the aim of AT is to improve functional capability and level of independence in people with long term health conditions and disabilities, and can be defined as *“an umbrella term for any device or system that allows an individual to perform a task they would otherwise be unable to do or increases the ease and safety with which the task can be performed”* [1, p.10]. AT is often purported to be a solution to the problem of the ageing population, however research has demonstrated that there are a number of barriers preventing the effective uptake of such technology. Despite this, there is evidence to suggest that AT may be a helpful solution in some cases – for example, improving quality of life and independence after discharge from hospital, reducing accidents in high-risk areas of the home, and aiding carers in their tasks [2]. Barriers to AT use include: not perceiving a need for AT, viewing AT as stigmatising due to negative attitudes towards ageing and dependence, and lack of information or awareness on the availability of AT to satisfy one’s needs [3]. This paper will focus on the barrier of lack of information, and describe a project which aimed to improve information access and provision regarding a particular type of AT – the fall detector.

### **1.1 Lack of access to information regarding AT**

Lack of access to information regarding AT is a well-documented problem, particularly for those who would benefit from it most, namely older and disabled people [4-6]. In 2013, Robinson et al [2] explored current practice and the state of AT information provision for the ‘oldest old’ (those aged 85 and above). They cited results including an American study which reported that a large proportion of older people do not have information on AT, and suggested that this may also be the case in the UK. Within the UK at least, there are sources of information on types of AT products which are available (examples include; ATDementia, AskSara, and websites of charitable organisations such as AgeUK, Alzheimer’s Society, and the Royal National Institute for the Blind). However it is still unknown how frequently such resources are accessed by older people or their friends and family [2,7]. When information is provided solely via the internet, this can cause problems for older

people trying to access information. Although the number of older people accessing the internet is increasing [8], currently the internet is not the dominant source of information for this age cohort. Indeed, the number of people accessing the internet decreases with increasing age and thus increasing need for AT and associated information [6, 9].

Older people and disabled people (and their carers) report that information regarding long term health conditions needs to be available either via central resources, or places often frequented (such as GP waiting rooms), rather than just being available via the internet [10, 11]. Indeed, for younger and older people with disabilities, access to information regarding AT is vital, as it has the potential to inform and empower people to make decisions which may improve their quality of life [12].

Those with long-term health conditions can themselves be the source of information. A formal example of this is the Expert Patient Programme (EPP), proposed in 2001 by the Department of Health, which argues that patients can, with proper support and training, be supported to play a bigger part in managing their own condition. However, this relies upon a sound and accessible knowledge base for patients to draw upon [13]. Once they have this knowledge however, expert patients can pass it on through their social networks to help others with their long term conditions [9]. In addition to the formal offering of EPP, there are a growing number of online (e.g. via patient.co.uk) and offline informal support groups (e.g. family and friends close to the older person). [6]. Indeed, Capel et al concluded that:

*“...information seeking is part of people’s normal social and everyday life activities and takes place within social and family networks and that information should be provided in a variety of formats, particularly for those who prefer to receive their information and support through social and face-to-face contact.” [9, p.250]*

For information to spread via expert patients and social networks, there needs to be good quality information for people to draw upon. This need for adequate information is ever more pressing where reductions in state funding means in the UK (and Europe-wide) the likelihood of older people having their AT funded by their local authority or NHS is reducing [3]. Thus, people may be required to purchase some AT privately, if they are unable to qualify for statutory support. Currently, privately purchased AT has yet to be established as a mainstream consumer option within the UK, but dwindling state support may lead to an increase in private purchasing by consumers, and the self-management of care needs [3,14]. If people are to self-purchase AT rather than having products or services recommended or provided by health and social care professionals, then there is a pressing need to ensure that good quality information regarding AT is available to inform people’s

purchasing decisions. The need for information is ever more critical since the introduction of the Care Act 2014, which requires local authorities to signpost people to information and advice about care and support services in their area. This could include consumer information regarding AT and where to purchase it, which may be particularly relevant where a local authority is not able to provide for a particular individual [11,17]. Such information regarding private AT is reported to be in short supply – which is a potential barrier to any consumer market, if the potential customers are unsure of where to purchase such products [2,3,15,16]. As Everingham et al describe:

*“...In modern western societies consumers expect to exercise considerable autonomy and choice. Thus information providers, whether governments, voluntary organisations or the private sector, need to consider ways to ensure that older people’s particular needs in relation to information provision are met.” [6, p.81]*

However, it has been recognised that currently health and social care professionals themselves are not always aware of services pertaining to their patient’s needs [10,18,19] therefore the information needs of clinicians must also be considered. As well as availability of information, the type, source, accessibility, and quality of information needs to be considered – information which is available yet inaccessible does nothing to reduce barriers to AT uptake.

## **1.2 Fall detectors and information provision**

A fall detector is a particular type of AT that detects if a person is likely to have fallen using algorithms (usually measuring acceleration and/or impact), and sends an alert to a friend or relative, or call centre who will be able to organise the required response. Identifying falls in a timely manner can provide people with an improved sense of confidence, and allow them to live at home independently for longer [22]. Devices are typically worn on a person’s wrist, waist, or sometimes around the neck. Fall detectors can be self-purchased, or accessed via local authority provision, but also have in common with other AT the barrier of lack of access to information. In 2012 it was estimated that 800 people fell per day in the West Midlands alone [20]. The quicker the response to a fall, the lower the risk of hospital admission, and the shorter the length of hospital stay and subsequent support requirements upon discharge [23]. Despite this, it has been reported that fall detectors, like other ATs are an underused resource [21].

The Health Design & Technology Institute (HDTI) Coventry University, and the West Midlands Regional Telehealthcare Network and Warwickshire PCT were funded by NHS West Midlands to develop a range of resources to help inform and support people at risk of falling, based upon the findings of a previous project

which aimed to evaluate the use of fall detectors in the West Midlands [26]. The methodology adopted in the project is briefly described below, and the key findings regarding the information provision surrounding fall detectors are discussed alongside the implementation of the findings. The paper describes how user-driven resources were developed based upon the project results, to help address the problem of poor information provision and access regarding the use of AT within falls management.

## **2. Method**

The resources were developed based upon findings from a previous project exploring the use of fall detectors in the West Midlands, UK. This project aimed to collect data regarding the awareness of, and use and non-use of fall detectors from the main stakeholders of the devices: those caring for people at risk of falling (via focus groups), telecare professionals working with fall detectors (via focus groups), and those who had been issued fall detectors as part of a care package (via interviews). Ethical approval for this project was sought from Coventry University Ethics Committee.

### **2.1 Focus groups with telecare professionals and carers of people at risk of falling**

#### ***2.1.1. Recruitment of Telecare professionals***

Telecare professionals who had experience of working with fall detectors were recruited from across the West Midlands to explore their views of issuing fall detectors to those who could potentially benefit from them via a focus group. Participants were recruited via the West Midlands Region Telehealthcare Network – a regional network for telecare professionals representing 14 local authorities, Primary Care Trusts (PCT), and the newly emerging (at the time) Clinical Commissioning Groups (CCGs) in the West Midlands. Permission to access members of the network was sought through the network chairperson. All members were then sent an invitation email and a Participant Information Sheet, and were asked to reply directly to the researcher with their interest. The researcher then contacted interested participants to further explain the study, and to arrange signing of consent forms.

### ***2.1.2 Recruitment of carers of people at risk of falling***

Carers of people at risk of falling were recruited from the West Midlands area to explore their awareness and views of fall detectors via a focus group. Participants were invited via AgeUK and local carer organisations and charities, and were asked to attend one of three focus groups held across the region. Permission to access the group was sought through the relevant gatekeepers. Participants had to be over 18 years old and able to consent to take part in the research. Gatekeepers distributed Participant Information Sheets, and interested participants were asked to contact the researcher directly with their interest. The researcher then explained the research further, and arranged the signing of consent forms. Those with dementia or cognitive impairments were excluded.

### ***2.1.3 Conducting the focus groups***

The focus groups were held in the spring of 2011. Each group took place at a venue convenient to participants and lasted approximately one hour. It was made clear to participants that taking part in the study was voluntary, that they would not be identified in any way throughout the research and subsequent dissemination, and that withdrawal from the study would not affect them in any way. During the focus group, participants were asked questions regarding their opinion of, and experiences of using fall detectors, using a semi-structured topic guide developed by the project steering group which included a range of falls stakeholders (including researchers, occupational therapists, and people working with AT, fall detectors, telecare, and falls). The interview schedule was then evaluated by an expert user from the West Midlands region, and modified based upon their suggestions. Focus groups were audio recorded for transcription, and analysed using Thematic Content Analysis to describe and summarise dominant themes and ideas [24]. Two researchers coded the data and reviewed each other's coding to ensure accuracy and consensus regarding the emerging themes. Dominant themes reached the point of saturation.

## **2.2 Interviews with fall detector users**

A service evaluation following the experiences of twenty people issued with fall detectors as part of their existing care package was conducted. As part of this service evaluation, users were interviewed to explore their experiences of using their fall detector over the first six months of use. Part of these interviews explored the provision of information regarding their fall detector. The interview schedule was developed by the project steering group (described above). The interview schedule was evaluated by an expert user from the West Midlands region, and modified based upon their suggestions. Invitations to participate in the service evaluation



were sent via the West Midlands Region Telehealthcare Network, who were asked to identify suitable potential participants, and to issue them with a Participant Information Sheet. Both younger and older users of fall detectors were sampled as lack of access to information is a barrier for older people and disabled people. Interested participants were asked to contact the researcher directly with their interest. The researcher explained the study in more detail, answered any questions, and arranged for the signing of consent forms. Participants were interviewed at the beginning of the service evaluation shortly after receiving their fall detector, at 3 months, and at 6 months (the end of the service evaluation). Interviews took place in the user's home (with the exception of the 3 month interview which was conducted via telephone). Participants were interviewed by one of two researchers from HDTI. Interviews were audio recorded for transcription and analysed using Thematic Content Analysis to describe and summarise dominant themes and ideas [24]. Two researchers coded the data and then checked each other's work to ensure accuracy and consensus of coding and the emerging themes. Dominant themes reached theoretical saturation.

### **3. Results**

The data for all stages of the research is described in greater detail elsewhere [21,25,26]. The findings described in this paper focuses upon views on the *information provision* surrounding fall detectors and falls.

#### **3.1 Views of telecare professionals and carers of people at risk of falling**

Details of the participants recruited to the focus groups are detailed in Table 1 (carers of people at risk of falling) and Table 2 (telecare professionals).

The focus group findings from both the telecare professionals and the carers were broadly similar, and revealed that fall detectors had a number of advantages, including: reassurance for the user, reassurance for carers and families, reduction in long lies (remaining on the floor for an hour or more [27]), and reduced hospital stays. There were also disadvantages cited, including: false positives and negatives, poor aesthetics, poor usability, issues with some people not accepting the need, poor battery life, lack of use at night (e.g. remembering to put the detector back on for a trip to the toilet), lack of range outside the home, and lack of preventative features, i.e. preventing rather than detecting a fall. Such advantages were felt to be important, and further highlight the necessity of improved access to information.

Both carers and the telecare professionals felt that there is a lack of awareness of fall detectors amongst the public, with fall detectors and AT and telecare in general, however people tended to be aware of ‘pendant alarms’. Indeed, the majority of carer participants had not been aware of fall detectors prior to the focus groups.

*“[No I didn’t know about them] ...Are all of these new? These that are activated by movement? Because the ones I know of you actually physically have to press.” (Carer 1)*

Despite this initial lack of awareness, once the carer participants had a chance to consider the advantages and disadvantages of fall detectors, the majority stated that they would be happy to try the devices, and felt that the advantages could potentially outweigh the disadvantages for those at risk of falls.

*“Yes, yes I would definitely [wear one], because the other day I was having falls ...I’m thinking if, yeah I can afford it and I think it’s an advantage to that person, I’d do anything, I’d try, I’d do anything, it would give peace of mind to me, and you know, you don’t want to take the risk if there’s something available [to help].” (Carer 14)*

This suggests that there may be a wider market of people who may benefit from a fall detector (or at least willing to try a fall detector); however access to information needs to be improved to ensure a greater number of people are made aware of fall detectors in the first place.

The telecare professionals in particular felt that there is a need for education amongst professionals outside the remit of those working directly with AT. The participants considered how the implementation of AT into fall care pathways across the West Midlands differs across the region, and this lack of implementation can hamper awareness of and access to information on potentially useful technologies.

*“I would probably say [fall detectors are not implemented into a falls care pathway] ...I think our falls pathway tends to be quite medical ...it’s linked very closely to the hospital and day unit. It tends to be, there tends to be a heavy focus on exercise and I don’t think the use of technology is really considered as part of the falls pathway” (Telecare Professional 1)*

It was felt that often the lack of awareness of the variety of products available was due to the statutory fall detector market being dominated by larger companies, and local authorities bulk purchasing contracts – this has led to a lack of diversity of products available to the end user. Further, whilst smaller companies have more room to innovate, they are hampered by the lack of interoperability between the different companies. Larger

companies may also have dominance over particular communication frequencies which are required for the devices to work and interoperate successfully. This lack of integration and poor awareness was thought to lead to both a low overall number of referrals (because of a low awareness of AT and fall detectors in general), and a high number of inappropriate referrals (due to lack of knowledge regarding the limitations of fall detectors). In particular, it was felt that staff outside the remit of telecare particularly needed educating regarding the indications and contra-indications of fall detectors. There was a feeling across the group that staff outside of telecare knew little more than the name of the device, 'fall detectors'. Some of the telecare professionals spoke of how they had worked to educate people (e.g. GPs) about the advantages and disadvantages of fall detectors, and this had led to a reduced number of inappropriate referrals in their local area.

*"...I think that education and awareness about what things can do, extends almost to letting people know what a fall detector can and can't do, where it fits into that pathway of all the other things you need to check as good practice ...And with GPs I think, my experience with GPs and a lot of my health colleagues is that their understanding of telecare is very limited, their understanding of the impact it can have is even more limited, and what they do know is a title, and they think that will do it. So they'll say 'Oh falls, detector – brilliant!'"*  
(Telecare Professional 7)

*"We used to have a lot of [inappropriate] referrals... For fall detectors, until we went out and really had a really good conversation with them, and explained the pros and cons and especially the cons of a fall detector, and now we don't get so many, nowhere near as many do we? And most of them are sensible referrals then, or actually meaningful ones." (Telecare Professional 8)*

There was a strong feeling that information surrounding fall detectors needed to be widely shared amongst both the public and the professionals.

*"My main comment would be, is that in the last few months, [we've seen three universities, including yourselves], all taking a look at assistive technology. We've got the main manufacturers, four or five of them now, what we don't want to see is five different solutions, ten different solutions, what we need to do is get it drawn together, in a meaningful way, so that when we do start delivering the things, and maybe we can share out the responsibility or maybe share the information out." (Telecare Professional 15)*

### 3.2 Views of fall detector users

Twenty service evaluation participants took part in the 3 user interviews (baseline, midpoint and endpoint), with the exceptions of Eric (unable to provide informed consent to the third interview) and Arran, Janice and Derek who had a later start date than other participants, therefore were only able to participate in two (face to face) interviews. Details of the service evaluation participants can be found in Table 3.

The views of the participants in the user interviews were mixed. Whilst most of the participants wore their fall detectors as instructed, a number of participants did not. The reasons for this were numerous and included: forgetting to wear the device, not wearing the device if visitors were expected, only wearing the device in the garden (not inside the home), and difficulties in attaching the device. Seven out of twenty of the service evaluation participants abandoned their device during the evaluation. Reasons for abandonment were; replacing the fall detector with a mobile phone which had a greater operable range with which to call help (although this would have had to been done manually), too many false positives or false negatives, and finding the device uncomfortable to wear. For those who did not abandon their device, the most important advantage afforded by the fall detectors was the reassurance provided to the user and their family and friends. The fall detectors gave participants a greater sense of confidence which led to an increase in the number of daily activities they completed around their home and garden.

*“...You feel confident that if anything happens you’ll be alright, you know? I’ve got all the confidence in the world ...means such a lot to know that you’ve got protection ...so that’s the godsend with these contraptions is they give that peace of mind an confidence.” (Steve)*

Younger participants (those in their teens and early twenties) felt a greater sense of independence due to their fall detectors, with their family and friends confidently able to leave them alone in their homes for extended periods of time. Further, all the participants who continued to wear their device were very pleased with the service they received from their call centre, and found that help arrived quickly, with call centre staff reassuring them in the meantime. The service received tended to mitigate some of the annoyance surrounding false positives (as call centre staff were always polite when dealing with a false positive).

Despite these described advantages of fall detectors, the user interviews revealed that there is not enough awareness of fall detectors and other AT, with not everyone who could benefit from such products knowing what is available, or indeed where to go for information. Participants were keen to stress that there needs to be an increase in awareness-raising and publicity for both fall detectors and AT in general.

*“No no, it was all new when [my social worker] suggested it ...I’d make more people aware of it ‘cause not many people are actually aware of it. There’s only actually a few social workers or people that ...actually know you can get on. It’s just not widely known that they are available.” (Aaron)*

One participant spoke of how she would wear her fall detector outside of her home, despite it not being in range of the base unit and therefore functional, as the obtrusive looking wrist-worn device would start a conversation with people, and she would then be able to educate somebody about the potential of the technology to help those at risk of falling. She was keen that people found out about the device.

*“...I’ve now got to the stage that I will wear it when I go out. Because people will say ‘What’s that then?’” (Janice)*

Those who were knowledgeable about fall detectors prior to being issued such a device had gleaned their information from friends and relatives.

*“I’d fallen down twice and nobody could find me ... [My friend] had already got a thing [fall detector] and we [Edward and Sheila] thought it would be a good idea if we had one, and we asked them [local council] for one... (Sheila)*

*““Not a clue, erm,...my sister, like she’s just graduating as a Social Worker so she’d found out all about it and stuff ...we’d not [have heard about it otherwise]” (Jonathon)*

#### **4. Resources developed to improve information provision**

The findings regarding information provision reflect the findings in the literature with regards to there being a lack of information or access to information about AT for older and disabled people. Overall, there are clear information needs with regards to both the public and health and social care professionals: (1) Raising awareness of fall detectors and AT in general; (2) raising awareness of the advantages and disadvantages; (3) raising awareness of the indications and contraindications of fall detectors; (4) raising awareness of the alternatives to using technology (e.g. prevention and risk management).

It has been argued that once an information need has been identified, older and disabled people need to be involved with exploring and proposing solutions to the information needs [6]. Therefore, the findings from both the focus group and the user interviews were used to identify opportunities to improve access to and provision

of information surrounding falls and AT that can be used to help support those at risk of falling. The project steering group met to discuss resource based solutions which would address the four information needs described above. Resources were developed using a variety of mediums, both traditional (print leaflets and reports) and modern (apps and online reports) to reflect the variety of information needs amongst the population of those at risk of falling, and those who work with those at risk of falling. The resources were developed in an iterative manner, with feedback from potential users informing the final draft of each resource. To ensure maximum accessibility to each information resource developed, a dissemination plan was considered for each.

#### **4.1 Fallcheck app**

An app was developed to help older people and their carers identify potential fall risks in the home. The app signposts to information on how one can reduce the identified risks, whether it is by simple modifications (e.g. removing a rug which poses a fall hazard), or the purchasing of AT (e.g. automatic lighting to reduce the risk of falls at night). The app was developed iteratively between the project steering group, with development and content led by an Occupational Therapist. A prototype version of the app was issued to falls professionals via the West Midlands Telehealthcare Network, who rated the app as '4 out of 5 stars' for various measures covering ease of use, usefulness, ease of learning, and satisfaction. Professionals also had the opportunity to suggest further changes. To ensure maximum accessibility of the app, it was developed as a 'web app', allowing use on *any* internet enabled platform, including all Smartphones and computers. Informal feedback on the app from users has been positive so far, and leaflets signposting to the app have been distributed in local hospital departments and local authorities. The project is now looking to validate the anecdotal positive feedback with a trial in the near future.

#### **4.2 Video – me and my fall detector**

An online video exploring four fall detector users' views (young and old) about their device, showing the pros and cons for detecting and managing falls. Content for the video was developed by the project steering group, with the areas for discussion approved by a small group of service users prior to filming taking place. The video has been made available online, and via DVD for those without online access to ensure maximum accessibility.

#### **4.3 'Worried About Falling' leaflet**

A leaflet was chosen as the dominant source of information for older people is not the internet, and older and disabled people have expressed a need to see leaflets and pamphlets in often frequented places [9-11]. The leaflet was also made available online, for those who do want to access their information via the internet. It has

been identified that people require their information to be locally specific, timely, and topic-based rather than agency-based [9]. Therefore the decision was made to include a signposting page on the back of the leaflet to allow agencies holding the leaflet (e.g. local councils, GP offices, carer charities) to paste in updated local information relevant to their population. To ensure the leaflet was topic-based, the content covered information regarding falls in general, not just focusing on either AT or statutory services as a solution. Drafts of the leaflet were iteratively developed between groups of falls professionals (to ensure accuracy of information) and people at risk of falling (to ensure understanding of information, and to gain opinion on the leaflet as it developed). The views of 15 people at risk of falling were sought on an initial draft of the leaflet. Feedback from this user group led to further modifications. The leaflet was sent out to a group of 8 service users prior to finalisation of copy and printing.

#### **4.4 Professional resources**

Two reports were developed to share good practice and innovation in falls services to attempt to address the lack of information available to health professionals. One provides guidelines for staff working in telecare or falls services on how to help build good practice in the area of fall detectors, and the other identifies and shares examples of areas of good practice, service innovation within falls prevention and response services across the region. The resources were drafted between the project steering group, and drafts of the documents were sent to relevant stakeholders to ensure accuracy of content.

### **5. Concluding comments**

This paper has described a project which explored the successful and unsuccessful use of fall detectors, which led to findings highlighting barriers regarding lack of access and provision of information about fall detectors, AT in general, and ways to manage fall risk without using AT. The findings were used to develop a range of resources aimed at both the public and professionals to attempt to remedy the lack of awareness and information provision surrounding fall detectors.

The findings and implications of this project extend far beyond the remit of fall detectors alone. With reductions in level of support provided by the state, and an increase in commercial providers of general AT products and services, the need for accessible information for both public and professionals will be greater than ever. Even where products and services are to be provided commercially, there may still be a role for statutory services to signpost citizens to sources of information regarding supportive products and services which can be privately purchased.

Where local authorities and the NHS are less able to provide AT based support to their citizens, professionals will be under increasing pressure to signpost people to alternative support mechanisms, some of which may include AT. It is therefore important that information resources are developed once a gap in the information base has been identified, or access and awareness to such resources is improved where provision exists.

Overall, this project has sought to improve access to information regarding fall detectors, but also falls and AT in general. There is still some way to go to make the range of resources ideal, and it is recognised that just because resources are available, this does not make them accessible. Whilst the leaflets and booklets are available in alternative languages upon request, more could be done to make the information provision regarding fall detectors as accessible as possible, including to those with sight or hearing disabilities/impairments, and for culturally and linguistically diverse communities (although the leaflet is available in alternative versions upon request). The project steering group are now attempting to disseminate information regarding the resources as widely as possible, to ensure maximum accessibility. This has included raising local and national awareness of the project via dissemination events (aimed at professionals, older people, disabled people, and carers), networking, and the use of the local press. The processes followed regarding identifying information needs and developing resources with the group of people at which the resources will be aimed, could also be applied to a wider remit of areas within AT.

All reports developed as part of the project are freely available online, and are available at:

<http://bit.ly/1ANhL4L>

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**Table 1: Focus groups with people caring for those at risk of falling - participant details**

	<b>Focus group 1</b> <b>April 2011</b>	<b>Focus group 2</b> <b>April 2011</b>	<b>Focus group 3</b> <b>May 2011</b>
<b>Location</b>	North West Midlands	South West Midlands	South West Midlands – Asian carers group
<b>Number of participants</b>	N=10	N=2* (low turn-out due to ‘no shows’)	N=2 (low turn-out due to ‘no shows’)
<b>Age range of participants</b>	55 – 91 years		
<b>Sex of participants</b>	Female, N=8 Male, N=2	Female, N=2 Male, N=0	Female, N=1 Male, N=1
<b>Facilitator</b>	Female Senior Research Assistant	Female Research Assistant	Female Research Assistant

**Table 2: Focus groups with telehealthcare staff – participant details**

	<b>Focus group 1</b>	<b>Focus group 2</b>	<b>Focus group 3</b>
	<b>March 2011</b>	<b>March 2011</b>	<b>March 2011</b>
<b>Location</b>	North West Midlands	Central West Midlands	South West Midlands
<b>Number of participants</b>	N=5	N=7	N=4
<b>Range of job roles with the focus groups</b>	A range of job roles were represented across the focus groups, including Team Leaders, Development Officers, Managers. Individual job titles are not presented to protect participant anonymity.		
<b>Facilitator</b>	Female Senior Research Assistant	Female Senior Research Assistant	Female Senior Research Assistant

**Table 3: Details of service evaluation (user interviews) participants**

<b>Participant number</b>	<b>Pseudonym</b>	<b>Sex</b>	<b>Age</b>	<b>Lives alone?</b>	<b>Indications for fall detector</b>	<b>Type of fall detector</b>
1	Jonathon	Male	19	N	Epilepsy	Tunstall waist worn
2	Peter	Male	81	Y	History of falls/diabetes	Tunstall waist worn
3	Flora	Female	86	Y	History of falls, has an artificial hip	Tunstall waist
4	Mary	Female	74	Y	History of falls	Tunstall waist worn
5	Steve	Male	73	N	Stroke, diabetes	Tunstall waist worn
6	Jason	Male	39	Y	Epilepsy, arthritis	Tunstall waist worn
7	George	Male	28	Y	Blackouts	Tunstall waist worn
8	Simon	Male	39	Y	Epilepsy, wheelchair user who has difficulty judging transfers	Tunstall waist worn
9	Daniel	Male	51	Y	Spina bifida, diabetes, poor mobility, lymphedema	Pendant (manual activation)
10	Edward	Male	86	N	History of falls	Tunstall waist worn
11	Sheila	Female	82	N	History of falls	Chubb wrist worn
12	Eric	Male	83	Y	History of falls	Chubb wrist worn
13	Louise – carer of Emily	Female	90 (Emily)	Y	Carer for her mother who has dementia and a history of falls – due to Emily’s dementia, she was unable to participate in the research, therefore Louise was interviewed as a proxy.	Chubb wrist worn
14	Barry	Male	25	Y	Epilepsy	Chubb wrist worn
15	Raymond	Male	58	Y	History of falls, poor mobility	Chubb wrist worn
16	Jamie	Male	19	Y	Epilepsy	Chubb wrist worn
17	Lara	Female	91	Y	History of falls	Tunstall waist worn
18	Aaron	Male	40	Y	Diabetes, tremors	Chubb wrist worn
19	Janice	Female	76	Y	Parkinson’s Disease	Chubb

						wrist worn
20	Derek	Male	79	Y	Diabetes	Tunstall waist worn