Attitudes to telecare among older people, professional care workers and informal carers: a preventative strategy or crisis management?

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Long Paper

Abstract

This paper reports findings from an attitudinal survey towards telecare that emerged from twenty-two focus groups comprising ninety-two older people, fifty-five professional stakeholders and thirty-nine carers. These were convened in three different regions of England as a precursor to telecare service development. The results from this study suggest that informants' views were shaped by prior knowledge of conventional health and social care delivery in their locality and the implication is that expectations and requirements in respect of telecare services in general are likely to be informed by wider perceptions about the extent to which community care should operate as a preventative strategy or as a mechanism for crisis management.

Keywords

telecare *older people* *attitudinal survey* *user needs*

1 Context for the Study

This paper presents findings from a short, six month long study of attitudes to telecare that was carried out between June and December 2004. The study provides input to a much larger, ongoing EPSRC EQUAL research consortium, Supporting Independence: new products, new processes, new communities, that commenced in October 2003 and is due to report in December 2006. The consortium is led by Imperial College London, and involves UCL, Dundee University, Barnsley Hospital NHS Foundation Trust, Thomas Pocklington Trust, Anchor Trust and Tunstall. Its overall aim is to understand the opportunities for and barriers to 'mainstreaming' telecare services in the homes of older people.

A major impetus for the formation of the consortium was the inclusion of three project partners where live telecare installations were planned to take place within the lifetime of the project. These provided field sites for action research that constituted three very different physical settings, each representing a major type of housing for older people. Barnsley's patients are living in mainstream housing stock, much of which comprises ageing terraced and semi-detached houses and post-war council flats that were not inclusively designed. The Anchor Trust is developing a technology-enabled retirement village in South Bucks, with houses and bungalows for sale to more affluent older people as well as affordable housing in the form of flats and bungalows for rent, whilst Thomas Pocklington Trust, a leading provider of housing for people with impaired vision, is currently upgrading its extra care housing scheme for older people in Plymouth. Before embarking on any telecare interventions in these varied physical settings, the consortium felt it was important to benchmark the opinions and attitudes to telecare held by older people, care professionals and informal carers in all three areas where the service would subsequently be introduced.

2 What is Telecare?

Promoting the independence of older people forms a key part of the government's health and social care agenda, and new care delivery models supported by information and communication technology (ICT) are being developed to assist in realising this goal [2, 3]. Telecare is one such model that uses ICT to bring health and social care directly to the end user by providing safety and security monitoring, physiological health and activity monitoring, and improved information and communication to people in their own homes [4]. It should be distinguished from telemedicine, which involves computer applications and

technologies that support the exchange of information directly among healthcare professionals [5]. It should also be distinguished from electronic assistive technology (EAT) that is designed to improve the functionality of the home by providing greater control over physical features like doors and windows, thermal comfort or home entertainment, alternatively referred to as a 'smart home' [17].

The origins of telecare date back to the 1940s, when bells and buzzers began to be hard wired into the homes of frail older people living in warden assisted accommodation, so that they could activate a switch or push a button to summon help in an emergency [20]. These were superseded by speech-based systems during the 1960s [16] and by first generation telecare systems in the 1980s and 1990s [15]. Second generation telecare, which depends on continuous, passive and 'intelligent' monitoring of the home environment or the individual and that is able to trigger an alarm automatically if an emergency is detected, became available in the late 1990s [15, 22]. Third generation telecare, which aims to improve both health and quality of life by enabling the home to function as a focus of 'care in the community' and as a 'virtual neighbourhood', whereby housebound people can use ICT to participate in wider society, is becoming available now [15].

A typical telecare service involves a system connecting sensors of various kinds that are dispersed in the homes of (or worn by) an older person, to a call centre. The sensors are either activated directly by the user, or raise an alert passively by recognising and responding to a change in the user's status such as a fall. The alert goes to a call centre, which then triggers a response that may involve informal carers, resident or mobile support staff or an emergency service, as required [8]. In some ways, then, telecare is simply an extension of the existing community alarm services, [7], of which there are about three hundred providers of services that are currently used by over 1.5 million people in the UK. The difference is in the growing use of ICT to deliver more control over the domestic environment and provide a 'security blanket' of reassurance for those being cared for and their carers.

Like many initiatives in the field of gerontology, the promotion of telecare is a product of the ageing society. Whilst the numbers of older people are increasing throughout much of the developed world, concerns have been raised that the numbers of family and friends that are able to provide regular, ongoing care and support are declining. For those informal carers who remain, carer stress is an important consequence of the caring role and a major reason for the admission of many older people to a residential care home. The UK government wishes to plug this emerging 'care gap' by providing telecare services to all those who need them by 2010 [12] and to that end it has recently invested £80 million in a

Preventative Technologies Grant to stimulate the uptake of telecare services [13]. The initiative is also intended to provide more choice and support for older people [14]. The stated objective is to support a growing proportion of older people to live independently in their own home for longer, by preventing unnecessary hospital admissions, permitting earlier discharges and reducing the numbers admitted to residential care [1]. Less often stated, but perhaps of greater concern in terms of its implications for the end users of support services, is the need to control the escalating costs of healthcare for those in later life.

Evidence is gradually accumulating that shows the efficacy of telecare in reducing hospital admissions and unblocking beds [6, 24]. Early trials suggest that it may be efficacious in managing chronic disease, by harnessing ICT to deliver continuous care to people in their own homes [9, 19]. In theory, since telecare can be customised to respond to the specific needs of individuals and their home environment, it is capable of addressing people's evolving care needs in a flexible and adaptable way, as part of an overall care package based on an individual assessment of need that can also include domiciliary care, assistive technology or home nursing care.

Whilst there is now widespread experience of telecare through pilot and demonstration projects, its introduction into mainstream care practice has proved far more problematic. The mainstreaming of telecare is falling well short of government's aspirations and there is now considerable doubt as to whether the target that, by 2010, all homes that require telecare will be receiving it can realistically be achieved [10]. Recognised barriers to take up include overcoming the enormous organisational complexity of the care delivery process. Aligning differences between organisational cultures and values, particularly in relation to perceptions of risk between medical practitioners and community-based support services is also recognised as problematic. It has proved hard to demonstrate the efficacy of telecare through systematic cost/benefit analysis that includes quality of life outcomes as well as resource implications, or to build business models that link the different actors in the supply chain, such as community alarm providers, equipment supplies and health and social care organisations, in a way that allows them to make informed and accurate decisions on pricing the different components of telecare services [3]. Telecare also carries connotations of 'Big Brother' and concerns have been raised both about the ethics of monitoring older people's behaviour in the privacy of their own homes [16] and also the difficulty of ensuring that consent to be monitored by ICT is genuinely 'informed' when the recipient of the technology is frail or confused [21]. Finally, not much has been done to identify the real, as opposed to the assumed, needs of all the stakeholders involved in telecare service delivery.

3 Defining User Needs

It is increasingly recognised that the routine use of telecare will require a better understanding of how it can be integrated into existing and evolving practices within care service delivery, and so be fully embraced and accepted by the end users of the service. To this end, some user needs studies have been carried out, but the majority of these appraisals have focused on the attitudes of professionals and policy makers and there has been little or no research into the acceptability of emerging new technology-enabled services like telecare by older people. Where older users have been consulted they were invariably the recipients of telecare, usually living in sheltered settings, who were being invited by a service provider to comment on the success of the intervention and so they may have been constrained in voicing reservations about the technology. Literature search early in the project revealed that very little research has been done on the real needs of the target user group for future telecare services, that is, older people currently living independently in the community. Unless investment is targeted at meeting the needs this group, who form the vast majority of older people, sustainable services are unlikely to develop and become fully integrated into the care system.

A likely reason for telecare to fail to make it into the mainstream is not technological failure, as most devices are promoted by the manufacturers of such technology as straightforward, tried and tested, inexpensive and easy to install, but its unacceptability to users [11, 18, 23]. In order to ensure that the appropriate technologies and services are installed in people's homes, there is a prior need to obtain the views of older people who may become users of the service in the future, about its usability and social acceptability. This is why we wanted to benchmark local opinion before any of the planned interventions took place. We also wanted to compare older people's propensity or antipathy to the concept with the attitudes of local health and care professionals involved in service delivery to older people in their own homes, and informal carers who were looking after older people. Later, it will be possible to compare these 'ambient attitudes' with those of older people who become personally involved in the field sites, immediately before installation and after nine to twelve months of living with the technology.

The objectives of the attitudinal study were therefore to explore the extent to which older people, carers and professionals consider telecare to be a potentially valuable service. By so doing, we hoped to understand the attitudes of older people living independently in the community to hypothetical situations where telecare might be an appropriate solution to a presenting situation, and to record any benefits or drawbacks that they could foresee in

relation to the deployment of such technology in the homes of older people. This would help us to understand why certain technologies may be accepted or rejected by older people. It would also be possible to compare the views of older people with those of relevant health and social care professionals, particularly in respect of the balance between risk-management and self-determination. This last objective was seen as particularly important in respect of lifestyle monitoring, which collects potentially sensitive personal information such as visits to the bathroom, patterns of eating, the amount of time people spend asleep and so on.

4 Research Methodology

Only a few isolated pilot studies were in existence in the three fieldwork areas at the time of the study, so because it was not a mainstream service we could not assume that our informants would have any prior knowledge of telecare. It was therefore necessary to explain the concept to all three groups of informants in a standard way, using simple terms that connected with their previous experiences. To this end, we developed three 'scenarios' that described in some detail situations where telecare could provide a solution to a perceived need (see Figures 1-3). These were based on real life people and situations, but modified to tease out views that might be expected to generate debate, considered reflection and relevant personal experiences.

Figure 1

Figure 2

Figure 3

Focus groups were preferred over one-to-one interviews, as the group situation is known to encourage the exploration of issues and stimulate debate, particularly important in a hypothetical situation. We therefore developed the scenarios in such a way that they could be discussed by small focus groups of about six to eight people. Separate groups were formed of older people, professionals and carers, so that each could speak freely. Before embarking on fieldwork, the scenarios were piloted with three older people's reference groups that did not

participate in the subsequent study. The scenarios were modified and clarified in the light of these experiences. Members of the consortium were also consulted at various stages during the design of the scenarios and provided constructive comments before the final versions were agreed on.

Two research team members who were familiar with the telecare concept, facilitated the focus groups. They collaborated to develop a script, which guided the way telecare was introduced and explained to participants at all the focus groups, starting with the purpose of the event and moving on to the delivery of the scenarios and their associated open discussions, before arriving at a 'question and answer' session that concluded the event. Before embarking on fieldwork, the facilitators observed one another's delivery to ensure that the focus groups were run to a common standard. Each scenario was introduced, verbatim, to each group in a standard way, with staged pauses to allow open discussion. Typically, a scenario lasted about twenty minutes before discussion spontaneously died down so that it was possible to move on to the next, so that the whole event was timed to last just over an hour, which was thought to be an acceptable length for an event involving older people.

After a discussion of the scenarios, focus group members were asked to respond by a show of hands to nine standard questions, asked of each group, to gauge people's opinions about different aspects of telecare services that had been identified as controversial by the literature. The first eight questions addressed four important issues: the extent of people's confidence in telecare services, the balance that should be maintained between independence and support, attitudes to risk management and ethical constraints on telecare implementation. The final question dealt with the potential users of telecare by asking who, out of all possible client groups, did participants believe would benefit from telecare services. Though 'quick and dirty', the advantage of answering a series of closed, yes or no questions by a show of hands was that this could be done easily and informally, without taking up a great deal of time or paperwork. It also allowed people with impaired vision to participate on equal terms, important since one of our project partners provides services for visually impaired people. The risk that people might be influenced by one another was offset by holding several separate groups, whether by role or by region. The answers could then be compared by group and by location, to determine whether opinion differed according to people's roles or circumstances.

Our target was to recruit thirty older people, fifteen carers and ten professionals from each area, in order to gather the 'ambient attitudes' to telecare in each location. Senior professionals from each area who provided a range of health and support services to older

people were identified and approached by phone or in writing. Members of older people's and carers' focus groups were identified with the assistance of health and social care professionals, through local older people's clubs and societies, carers' self help and support groups and by word of mouth, and were indirectly approached through the relevant intermediary. Sheltered housing settings as well as community facilities were used to host these events, to encourage the participation of elderly or frail people as well as those who were more active. In the end, twenty-two focus groups were convened, involving one hundred and eighty-six individuals altogether, including ninety-two older people, fifty-five professional stakeholders and thirty-nine informal carers. In one or two cases, people left before the questions due to a previous engagement, hence the difference between the number in the group and that answering questions (nQ).

All the focus groups were tape recorded, and each transcript was subsequently subject to content and thematic analysis by the facilitators and by the corresponding author, who checked the reliability and consistency of the data extraction process. The answers to the questions that we asked at the end of the discussion period could be yes, no or abstain. These were coded by geographical region and by type of participant (older person, carer, care professional) and entered into a standard statistical package, from which simple descriptive statistics were generated to see if clear numerical differences of opinion emerged between the groups or across regions.

This was a contextual, opinion-gathering study to benchmark the attitudes of older people before they had become personally exposed to a change in their care requirements that might mean that they had to take a personal decision about telecare. We therefore did not set out to gather large amounts of personal data about our informants as this was not strictly necessary, was inappropriate to a focus group setting and could have discouraged recruitment. However, we can report that the majority of the older participants lived in mainstream housing and were aged over seventy-five, the youngest were in their late fifties and the oldest were over one hundred. Reflecting demographics, the gender balance in all three groups was towards women; 68% of older people, 72% of carers and 75% of professionals. Older informants were typical of people from a variety of socio-economic backgrounds and were living in a wide range of housing circumstances. Carers were largely younger people, responsible for older dependants. Professionals represented middle and senior management from health, social services, housing and the voluntary sector, all directly responsible for and experienced in commissioning and delivering services for older people.

Some were actively beginning to consider exploring the potential benefits of telecare to provide additional services for older people living in their area.

5 Findings in respect of the scenarios

The initial impression we received when carrying out fieldwork was that the focus group discussions were rather predictable and picked up on relatively few, well rehearsed themes that seemed to point to rather uniform findings across all twenty-two groups involved. Many participants spoke favourably of the potential preventative benefits of telecare, especially the reassurance and peace of mind it could give to older people and their carers. Critical comments were made in the context of design, particularly of devices that are meant to be worn. The main issues here related to gender, forgetfulness in using devices, over sensitivity of equipment and concerns about false alarms, problems with voice prompts and concerns over the reliability of devices, possible failure and the need for speedy repairs.

Telecare was seen to increase people's options, providing a way of staying put for longer as well as to remain less obligated to friends and family for daily monitoring. Lifestyle monitoring was viewed positively by carers and professionals, who spoke about consequent better understanding of people's daily patterns of behaviour and how this would help to construct a more informative profile of the individual that would allow them to deliver a more personal service. However, all groups were concerned about the confidentiality of sensitive data, in the context of what was viewed as 'a creeping culture of surveillance'. Concerns were also voiced about the possibility that it could undermine individual choice and independence. The phrase 'Big Brother' occurred in just about all discussion groups.

There was general agreement that a thorough and holistic needs assessment should underpin an individual, tailor made approach to the provision of telecare services. The concern was often voiced that assessment should not be resource-led, where the provision of a standard package of telecare could be used to compensate for the lack of attention given to complex needs. However, the majority of participants shared the view that the provision of telecare services to people with dementia is particularly fraught with difficulties. Concern centred on the level of co-operation and understanding required, and on the need for informed consent. Participants shared the view that if a person had received a diagnosis of dementia it may already be too late for then to benefit from the technology and that closer monitoring by professional carers should be the priority. Though there was an acknowledgement that benefits could ensue, for example by relieving neighbours of the worry of watching out for an

older person living nearby, a cautionary note was sounded that lack of understanding and co-operation in respect of monitoring devices could lead people into potentially dangerous situations, such as trying to 'mend' a cooker that had been switched off automatically. 'Disembodied' voice prompts were also a cause for concern.

Whilst it was acknowledged that telecare had the potential to broaden people's 'virtual community' by introducing them to new social contacts and there was general agreement that telecare could usefully be part of a community care package rather than a stand alone service, the point was made many times that it should not take the place of human contact. The role of informal carers and community support workers in 'keeping an eye' on someone older and spotting small, telltale signs of a deteriorating condition were mentioned many times in discussions, thus suggesting that people as well as health monitoring devices have an important role to play in pre-empting a chronic condition turning into an emergency. A fear often voiced was that telecare technologies will be used to replace traditional 'human effort' and that staff will inevitably be withdrawn as a consequence of the introduction of telecare services. Most participants thought that if the service were introduced and resourced as it deserved, it would actually increase demand for face-to-face contact by teasing out unmet needs among older people.

Concerns were raised that telecare would not be possible to guarantee an appropriate and timely response without a large injection of resources. Many older participants referred critically to the already overstretched arrangements for 'care in the community' and speculated that the service will only be as good as its response to an emergency, and that the back-up support systems need to be in place to ensure that this happens. In the minds of many participants, either informal carers or emergency services will be relied upon to provide the initial response. They were under no illusion that telecare will require a 'terrific input' and a 'colossal back up staff' if it is to 'work properly'.

Participants across all types of focus group were concerned about how much the service would cost to provide. There was little support for the idea that older people themselves should pay and professionals doubted whether people would invest in the service late on in life, when they might not see any long term benefits. Most thought that government (notably the National Health Service) should fund telecare, especially if the service is intended to keep people out of hospital, but as it may be suggested that basic community equipment is under-resourced doubt was cast on this as a way of funding the service. Clearly, telecare needs to be property costed and resourced if it is to gain the confidence and trust of potential service users and professionals.

6 Responses to questions

This section of the paper considers voting patterns in respect of the eight issue-based questions that were asked at the end of each focus group. These were intended to capture in a more robust form the qualitative comments that arose in open discussions, that were briefly reported above. The scenarios themselves produced a broad consensus across all the focus groups, and the feelings expressed in open discussions were rather predictable and not particularly controversial [21]. What is of interest, then, is that the questions that probed issues of confidence, independent living, risk management and ethics elicited a wide variety of responses from participants in the various focus groups. The only question that received a consistent response was the first, which asked (Q1) *'Do you feel you understand the purpose of telecare and how it works?'* To this, 100% of professionals, 98% of carers and 96% older people said 'yes', which is good for us as if they had not it would have reflected badly on our presentation.

Table 1

Table 2

Table 3

However, in response to the question, (Q2) *'Would you be happy to have such a service in your own home?'* a clear difference emerged between the professionals and the rest, as 92% of professionals said 'yes' whereas only 68% of carers and 64% of older people agreed ($p < .01$)[1], showing that the professionals are keener to see this service put into place than their 'customers' are. Interestingly, though, interviewees in Barnsley were more ready to accept the service (88%) than were those in either South Bucks (63%) or Plymouth (63%) ($p < .01$). Looking separately at each of the nine sub-groups, older people in South Bucks (42%)

[1] Each statement in the text that relates to one of the three accompanying tables is identified by a reference. p-values of significant relationships are mentioned in the text but due to space constraints are reported in brackets.

and carers in Plymouth (40%) were markedly more dubious about accepting the service than any of the other seven groupings ($p < .001$).

The question, (Q3) *'Would you be confident to have your blood pressure etc. monitored electronically, as opposed to going to the doctor or having a community nurse visit you at home?'* provoked the response that 73% of older people would, but with pronounced differences between the three sites, in that 100% of South Bucks residents would be happy, whereas only 75% of Barnsley residents and just 48% of Plymouth residents would (see Table 1). Only 47% of carers agreed, which is interesting because the literature and the intention of the service itself stress that they are one of the groups who ought to be reassured by this happening automatically as a passive form of background monitoring. Again there were clear differences between the sites, in that Barnsley carers were happier (73%) than those in Plymouth or South Bucks (33% and 44% respectively) (see Table 2). Overall, 76% of professionals said 'yes' in the case of their own self-monitoring, perhaps a lower percentage than their enthusiasm for the service in principle would have predicted, and moreover, whereas 100% of the Barnsley professionals and 77% of the Plymouth professionals would be happy to receive this service, only 54% of South Bucks professionals agreed that they would have confidence in the service (see Table 3).

Asked, (Q4) *'Do you think people with telecare will be able to stay in their own home for longer than those who do not?'* 98% of older people thought so, as did 79% of carers but just 43% of professionals agreed ($p < .001$), which again is interesting as this is one of the main justifications for the technology. Here, however, the professionals who are responsible for commissioning the service are probably more conscious of the actual 'trigger factors' that prompt a move up the care ladder, and markedly more sceptical about its benefits than the end-users. There were no marked regional differences on the responses to this question.

A profound difference between the sites emerged among the older service users in response to the question, (Q5) *'Will telecare reduce the need for face-to-face visits by care workers?'*. Just 7% of older people from Plymouth and no older people at all from South Bucks agreed with this proposition, whereas 94% of the older people from Barnsley agreed that the need for face-to-face contact would indeed diminish with telecare (see Table 1). Among carers the split was equally pronounced. No informal carers in Plymouth and only 7% from South Bucks thought that care needs would reduce, whereas 100% of Barnsley's informal carers saw telecare as a way to reduce the need for face-to-face visits by care professionals (see Table 2). 49% of care professionals also agreed, with no marked differences between the sites, but over half disagreed with the proposition. Barnsley (55%)

and Plymouth (54%) were more in agreement that care needs would be reduced than their Plymouth colleagues (39%) (see Table 3). As we have seen, a good proportion of professionals predicted that the need for face-to-face visits will actually increase with telecare.

When asked, (Q6) *'Are people likely to be safer at home with telecare?'* older Plymouth residents were much more doubtful (58%) on this count than the older people from the other two regions (96%, South Bucks and 100%, Barnsley) (see Table 1). Informal carers in Barnsley were also 100% convinced, whereas in South Bucks the figure was 78% and in Plymouth only 53% of informal carers thought telecare would make older people safer in their home (see Table 2). However, 97% of professionals across all three regions agreed with the proposition, with no marked differences between the sites (see Table 3).

Telecare can be viewed as a risk management strategy and so to examine the acceptability of this we asked our focus group informants, (Q7) *'Should someone older and known to be 'at risk' ever be prescribed a package of telecare, "for their own good"?'*. The answer was a resounding 'No'. Only 10% of older people agreed, with only a slight degree of difference between the sites in that 4% of older people in South Bucks and 10% in Plymouth agreed, compared with 14% of Barnsley residents (see Table 1). Carers were even more emphatic, with just 2% (all from South Bucks) agreeing. No professionals were prepared to recommend this, but whereas representatives from Plymouth and South Bucks declared a definite 'No' on this issue, all the Barnsley professionals abstained (see Table 3).

Question eight specifically related to lifestyle monitoring and asked, (Q8) *'Do you have any concerns about the kind of information (on lifestyle patterns) that telecare is able to gather about how people are living at home?'*. 51% of older people said 'Yes', with very little by way of difference between the sites, as did 51% of carers, with the proviso that, in the case of Barnsley, this figure was just 9% whereas the other two regions scored 60% and 63% (see Table 2). 84% of professionals also agreed, but whilst 92% of professionals in Plymouth and South Bucks had reservations about lifestyle monitoring, only 64% of Barnsley professionals shared these concerns (see Table 3). This suggests that many service providers are, at this point in time, slightly uneasy about the potential of the service to redefine the boundaries of what personal information should be available to professionals when making decisions about individual cases.

7 The Offer of Telecare

The ninth and final question concerned the point in people's lives at which they should be offered such a service. Based on the literature, this question proposed seven potential user groups (numbered 9a-9g) that varied in inclusiveness from everyone over the age of sixty-five, all those with a chronic long term illness, people living in sheltered housing and all those who live alone, to people with dementia, those who would otherwise have to move into residential care and community alarm users. There were marked variations between the sites in response to the proposition that people should be routinely offered the service at sixty-five (Q9a). 10% of Plymouth residents, 47% of carers and 46% of care professionals said 'Yes'. So did nearly one in three of the professional service providers in Barnsley. Everyone else said 'No' ($p < .001$). Most older people seemed to think that this was too early on in the 'third age'.

Nearly everyone seemed to think that telecare was a more appropriate response to chronic long term illness (Q9b), as 76% of all older people and 79% of all informal carers thought telecare was a suitable response under these conditions and so did 54% of Plymouth care professionals and 62% of the care providers in South Bucks (see Table 3). The exception was Barnsley, where no professional care providers at all agreed that this would be an appropriate response (Table 3), a remarkable divergence with the views of their customers as 94% of older Barnsley residents and 91% of the informal carers in Barnsley would have welcomed telecare under these conditions (see Table 1 and 2).

About 17% of older people and 13% of informal carers thought it would be a good idea to offer telecare to tenants living in sheltered housing (Q9c), with no pronounced variations between the sites, but whereas 92% of Plymouth care professionals and 69% of South Bucks providers thought this would be a good idea - far more than their customers in this instance - only 9% of Barnsley care providers thought telecare was an appropriate service for sheltered housing (see Table 3). The low numbers of older people and carers who thought telecare should be routinely offered to people in sheltered settings is interesting, as this setting is sometimes perceived by housing and care providers to be an appropriate location for the service. Our older informants felt that sheltered housing gave an equivalent service, so that telecare was not necessary. The Barnsley professionals agreed, and in this respect their views were more similar to older people, but professionals in South Bucks and especially Plymouth thought that it should be a service for people in sheltered settings, precisely because people in sheltered housing had already set foot on the 'ladder of care'.

Living alone was a situation that provoked one of the most diverse responses. Between a third and half of all three groups from Plymouth thought that telecare was a good service for people who lived alone (Q9d). Three quarters of the older people in South Bucks agreed, but less than a quarter of local professionals and informal carers agreed with them ($p < .001$). A quarter of Barnsley's older people also agreed, but in this case no informal carers or professionals thought that living alone merited an offer of telecare ($p < .001$).

Despite reservations expressed in focus groups, a far higher percentage of older people from South Bucks (92%) thought telecare should be offered to people with dementia (Q9e) than did their Barnsley counterparts (11%). Plymouth's older residents were equally divided for and against (55%) (see Table 1). A third of Plymouth's informal carers and nearly half of carers living in South Bucks thought so too, but none of Barnsley's informal carers agreed that telecare was a suitable service for someone with dementia (see Table 2). The professionals in Plymouth and South Bucks were in agreement with their respective client groups in that 85% of the former and 100% of the latter viewed telecare as an appropriate service for someone with dementia. Fewer of Barnsley's care professionals thought telecare was appropriate in this situation (36%) so although they were keener than their customers, their answer reflected the expectations of local people (see Table 3).

In the case of a situation where the only alternative would be to admit someone to a care home (Q9f), all the older people were in agreement that telecare would be an option that should be offered, with 95% agreeing and not much variation across all three regions. 40% of Plymouth's informal carers and a quarter of carers in South Bucks thought so too. But, perhaps surprisingly, none of the informal carers in Barnsley thought telecare should be offered under these circumstances (see Table 2). 100% of Plymouth's care professionals and 92% of the professionals in South Bucks also agreed, but only 36% from Barnsley concurred (see Table 3).

Telecare is a logical extension of the community alarm service, and so the final situation considered was whether is would be appropriate to offer telecare to people who already had a community alarm (Q9g). 84% of older people from Plymouth and 92% from South Bucks agreed, but only 39% from Barnsley did so (see Table 1). 80% of Plymouth's informal carers but just 37% from South Bucks and none at all from Barnsley agreed. 9% of Plymouth's care professionals, 92% from South Bucks but just 9% from Barnsley agreed (see Table 2). In South Bucks, and to a lesser extent in Plymouth, there was agreement between users and providers that telecare was a legitimate extension of the existing service, but not in Barnsley where both older service users and especially those responsible for delivering

support services in the community felt that the possession of an alarm was not a good reason for offering telecare.

In effect, the majority of older people in South Bucks thought telecare should be offered in every situation that might be construed as vulnerable as people could always refuse it, but not if they could be construed as managing independently - at sixty-five or when living in sheltered housing. The majority of Plymouth residents thought that the service should be reserved for people suffering from dementia, community alarm users or where the alternative was institutionalisation, but not when people were ill or living alone. Barnsley residents thought the service should only be available to people who were ill or at risk of entering a care home.

The majority of care providers in South Bucks and Plymouth agreed with one another in their assessment of when an offer of telecare should be made, and felt that it could be beneficial to people in all situations except at sixty-five or when living alone. However, the majority of Barnsley's professionals did not think that it should routinely be offered in any of the situations we described. Unlike their clients, South Bucks and Plymouth providers saw telecare as an asset in sheltered housing, possibly because they could envisage benefits to the support staff rather than to the tenants, whilst for people living alone they were less likely to see this as a presenting problem and so did not perceive that this, on its own, would be a sufficient reason to offer the service. Also, and again unlike their clients, Plymouth care providers saw telecare as an asset to someone who was ill. The majority of informal carers, on the other hand, thought that telecare should only be offered to people when they were chronically ill, but not in any other circumstances, the exception being in Plymouth where informal carers thought it would also benefit existing social alarm users.

8 Discussion

Older people in South Bucks and Plymouth seemed to be thinking of the service as more of a 'preventative' strategy, and so argued that it would be beneficial to be offered the choice of telecare in any situation where it might have the potential to avert a crisis some time into the future, and on the whole the local support services professionals also took the same view. Older people in Barnsley seemed to have adopted a slightly different attitude to telecare. Their attitude could be interpreted more as 'crisis management' (it could be useful when ill or at risk of going into a care home), but otherwise most people's realistic assessment was that the situations described would not be assessed as a sufficiently high priority. This seemed to

be a correct assessment of local health and social services priorities, as most Barnsley professionals did indeed judge that telecare was not an appropriate service for most of the situations we suggested, and none of the situations we described attracted more than a third of the professional vote in the case of Barnsley.

This is unlikely to be the result of different states of prior knowledge about the new technology and service delivery mode, as most of the older users and the professionals we spoke to confirmed that, before they had participated in a focus group, they were not particularly *au fait* with telecare. On the contrary, most had come to the focus group 'out of curiosity' to find out more and to become more informed. In this respect, everyone took the group discussions very seriously, engaging actively with the topics and thinking deeply about the implications of telecare not just for their own situation but for the generality of older people, those directly involved in care giving and the implications for the care system as a whole. Nor is it likely that these differences in voting patterns can be explained by different group dynamics, as they are the result of several sessions in each location that were run to a standard format, and our initial reading of the transcripts seemed merely to confirm that the discussions of the 'scenarios' we presented took a fairly predictable trajectory, raising similar points, observations and dilemmas for professionals and service users alike across all three field sites.

The population in Buckinghamshire is twice the size of the other two authorities, with a population of 478,100 as opposed to 217,900 and 240,500 for Barnsley and Plymouth respectively, but the proportion of older people in all three areas is similar, between 15%-16%. However, our three telecare sites show considerable variations in terms of the kinds of services they already offer and their effectiveness. The differences in voting patterns may therefore be 'explained' by people's prior knowledge of the patterns of service delivery in the three areas, and the assumptions, attitudes and values that shaped and underpinned expectations generally in each area of the country about the quality and availability of support and care in the community.

For example, Barnsley provides considerably more of home help / home care than the other two authorities. Based on the contact hours of home help per 10,000 households, compared to the England average Barnsley provides 34% more, Buckinghamshire 6% more but Plymouth 36% less than the national average. In respect of the number of households receiving help, standardised as before per 10,000 households, again Barnsley provides care to the most households, comparable with the average for England, whereas Buckinghamshire's figure is 24% below and Plymouth's is 52% below the national average. Plymouth, on the

other hand, has 40% more residential care places and 27% more nursing home places than the national average. Barnsley also has slightly more residential (11%) and nursing home (13%) places than the average, but Buckinghamshire has 12% fewer residential places and 4% fewer nursing home places than the average for England. Buckinghamshire has more hospital beds per 1,000 population aged over sixty-five, 38 (over twice the national average of 17) as opposed to 29 in Plymouth and 17 in Barnsley. In terms of intermediate care, Barnsley's emphasis is towards preventing admission to an acute hospital setting, whereas the focus in Buckinghamshire is on facilitating early hospital discharges with more intensive short-term support and rehabilitation. Re-enablement towards independent living may be regarded as less well developed in Plymouth.

It could therefore be that the health care professionals in Barnsley are more opposed to telecare as they believe that their existing services are effectively offering sufficient support and care to people living in the community. People in Buckinghamshire have more access to hospital beds and aim to discharge people early with short term support at home, but they have less access to long term home care, residential care and nursing care than in other parts of the country, so maybe service users and professionals in Buckinghamshire view telecare as a way of speedily addressing imbalances in the supply of all these services. Plymouth has many more care home places than the norm and would seem to have historically placed people in residential or nursing care earlier than in other parts of the country, and this may shape people's expectations to look to this sector and not telecare to meet older people's care needs. However, there is a significant problem in recruiting care staff in Plymouth that affects their ability to provide care in the community, so telecare could be perceived as a solution to this particular issue.

9 Conclusion

Increasingly, policy makers and practitioners in health and social care are turning to telecare as a tool that will enable older people to remain longer in their homes and avoid institutional care, but studies are only now beginning to attend to the views and aspirations of the prospective recipients of telecare services. The participants in our study drew attention to the benefits of telecare but they also raised concerns and questions that merit further attention. Telecare clearly needs to be appropriately targeted, based on careful, detailed assessment, and needs to take account of the importance to older people of human contact. It also needs to be properly resourced if it is to gain the confidence of

professionals and potential service users. This study has shown that the demand for and the supply of telecare services is likely to be influenced by how different actors and agents perceive the entire *raison d'etre* of the emerging healthcare marketplace, particularly the extent to which it should function as a rapid response to an individual crisis or a preventative service for everyone. The government's ambitions for telecare are clear, but yet another barrier to mainstreaming could result from these deep-rooted perceptions about whether telecare services are intrinsically prophylactic or therapeutic.

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Table 1 Percentage responses from older people by location

Older people	Plymouth (nQ= 31)			South Bucks (nQ= 24)			Barnsley (nQ= 36)			p-value of chi square (significant only)
	% yes	% no	% abstain	% yes	% no	% abstain	% yes	% no	% abstain	
Q1	100	0	0	100	0	0	89	11	0	$p < .05$
Q2	61	26	13	42	33	25	81	6	14	$p < .05$
Q3	48	39	13	100	0	0	75	22	3	$p < .01$
Q4	93	7	0	100	0	0	100	0	0	
Q5	7	93	0	0	100	0	94	0	6	$p < .001$
Q6	58	36	6	96	4	0	100	0	0	$p < .001$
Q7	10	74	16	4	96	0	14	86	0	$p < .05$
Q8	45	13	42	58	33	8	50	44	6	$p < .01$
Q9a	10	80	10	0	96	4	0	100	0	$p < .05$
Q9b	48	45	7	83	4	13	94	0	6	$p < .001$
Q9c	19	74	7	8	88	4	19	78	3	
Q9d	48	45	7	75	0	25	25	53	22	$p < .001$
Q9e	55	32	13	92	4	4	11	67	22	$p < .001$
Q9f	87	7	7	100	0	0	0	97	3	
Q9g	84	13	3	92	0	8	39	36	25	$p < .001$

Table 2 Percentage responses from carers by location

Carers	Plymouth (nQ= 15)			South Bucks (nQ= 27)			Barnsley (nQ= 11)			p-value of chi square (significant only)
	% yes	% no	% abstain	% yes	% no	% abstain	% yes	% no	% abstain	
Q1	100	0	0	96	0	4	100	0	0	
Q2	40	60	0	70	22	7	100	0	0	$p < .01$
Q3	33	67	0	44	41	15	73	0	27	$p < .05$
Q4	80	7	13	70	7	22	100	0	0	
Q5	0	100	0	7	85	7	100	0	0	$p < .001$
Q6	53	33	13	78	7	15	100	0	0	$p < .05$
Q7	0	100	0	4	85	11	0	100	0	
Q8	60	20	20	63	26	11	9	9	82	$p < .001$
Q9a	47	53	0	0	100	0	0	100	0	$p < .001$
Q9b	60	20	20	85	0	15	91	0	9	
Q9c	13	60	27	19	70	11	0	0	100	$p < .001$
Q9d	33	40	27	15	70	15	0	0	100	$p < .001$
Q9e	33	53	13	48	30	22	0	0	100	$p < .001$
Q9f	40	60	0	26	41	33	0	0	100	$p < .001$
Q9g	80	0	20	37	0	63	0	0	100	$p < .001$

Table 3 Percentage responses from professionals by location

Professionals	Plymouth (nQ= 13)			South Bucks (nQ= 13)			Barnsley (nQ= 11)			p-value of chi square (significant only)
	% yes	% no	% abstain	% yes	% no	% abstain	% yes	% no	% abstain	
Q1	100	0	0	100	0	0	100	0	0	
Q2	92	8	0	85	8	8	100	0	0	
Q3	77	23	0	54	31	15	100	0	0	
Q4	46	0	54	46	8	46	36	0	64	
Q5	39	23	39	54	31	15	55	0	45	
Q6	92	0	8	100	0	0	100	0	0	
Q7	0	100	0	0	100	0	0	0	100	$p < .001$
Q8	92	8	0	92	8	0	64	9	27	$p < .05$
Q9a	46	54	0	0	100	0	27	9	64	$p < .001$
Q9b	54	46	0	62	31	7	0	36	64	$p < .01$
Q9c	92	8	0	69	23	8	9	27	64	$p < .001$
Q9d	31	69	0	23	77	0	0	36	64	$p < .001$
Q9e	85	15	0	100	0	0	36	0	64	$p < .001$
Q9f	100	0	0	92	0	8	36	0	64	$p < .001$
Q9g	69	23	8	92	0	8	9	27	64	$p < .001$

Figure 1 Scenario one - Mrs Lewis forgets about the bath and also wanders.

Context	Contribution of Telecare
Mrs Lewis lives alone in a small flat on the third floor of a large Victorian house.	
She is becoming forgetful and has twice left the bath taps running until the bath overflows. The landlord is unhappy and the neighbours have little sympathy.	A flood detector system will judge when the bath has filled to a safe level and then cut the water flow, preventing a flood.
Mrs Lewis also sometimes forgets to get out of the bath until the water is really cold and her body temperature has dropped to an unhealthy level.	The system will also detect if the bath water is not drained after a reasonable time and will alert the monitoring centre or an identified carer
There is a further problem, in that Mrs Lewis sometimes wakes in the early hours and tries to leave the home, thinking it is time to go for a walk or visit friends.	A 'Wandering Monitor', which detects movements, is fitted near the front door. If Mrs Lewis tries to go out, say at 2 a.m., she will hear a verbal message reminding her of the time and encouraging her to go back to bed. If she continues to exit through the door, a sensor triggers a silent alert, which is then sent to the monitoring centre or an identified carer.

Figure 2 Scenario two - Mr Agnew is prone to falls and also has little social contact.

Context	Contribution of Telecare
Mr Agnew is 86 and lives alone in a first floor flat, which he rarely leaves.	
He lost the sight of one eye in the last world war, and has difficulty moving around in the flat because of problems with his spine. He sometimes finds it difficult to keep his balance, despite his trusty trolley, and has fallen three times over the past eighteen months.	Mr Agnew's home help tells him about a fall detector system. This would involve Mr Agnew wearing a sensor, which he can use to trigger an alert or which will automatically detect a fall and alert the monitoring centre or an identified carer. Mr Agnew could also benefit from an electronic sensor that would detect significant changes to his blood pressure, and raise an alert accordingly.
Mr Agnew is also in need of social stimulation. He has few local contacts but would like to be in touch with other retired teachers, and feel part of the world outside. He would also like to have more regular contact with his GP, to ask questions about his complicated medical condition and receive advice.	Mr Agnew could benefit from an information and Communication system, such as a computer or a special TV set box, that would provide access to the internet. Using a laptop infra-red linked keyboard to access the system, Mr Agnew would be able to communicate by email with other retired teachers, as well as to read the daily paper on the screen. Mr Agnew could also use this system to find out about local services, such as a home visiting service to provide company. He would also be able to talk to his GP or other health professional, using the TV or computer, having booked a time for this.

Figure 3 Scenario three - Miss Busbridge has irregular sleep and disrupted routines

Context	Contribution of Telecare
Miss Busbridge is aged 99, has never married and has no family contact. She is very independently minded and prides herself on keeping going, despite various health problems. The only things she needs, she says, are 'new eyes, new ears and a new hip'.	
However, a friend who visits each week to do the shopping, has noticed that Miss Busbridge is having trouble sleeping, and apparently gets up in the early hours and paces the flat before falling asleep in a chair, from which she wakes in discomfort.	A bed occupancy sensor would notice if Miss Busbridge fails to return to bed after a reasonable time. A voice prompt will gently remind her that it is still night time and that she should get back into bed. If Miss Busbridge does not return to bed, the system will raise an alert, to inform the monitoring centre or an identified carer.
Sometimes, Miss Busbridge neglects to eat or drink as regularly as she should. She knows there are risks involved with her disrupted routines, but insists she does not want people visiting and bothering her, nor does she want to move from the home she has lived in for over sixty years.	A monitoring device could be installed, which would note the time and frequency of certain everyday activities, and judge whether Miss Bubridge is at risk. For example, sensors could record her use of kitchen appliances such as the fridge or the kettle. If Miss Busbridge departs from her usual routines of using such appliances, this information would be passed to local support services, who would then visit to discuss the situation, and whether she needs any more help.