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# Who Uses Telecare?

**Andy Ross and James Lloyd**

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# Executive Summary

## Introduction

This research investigates the prevalence of telecare users and potential users in England in 2008, using data from the English Longitudinal Study of Aging (ELSA), a nationally representative study of older people in England.

Two types of devices are identified: mobile personal alarms; and, alerting devices fixed to the home.

## Demographic and socio-economic characteristics

Our analysis shows that in 2008, just over 2% of individuals aged 50 and above in England used a personal alarm, whilst just over 4% had an alerting device fitted to their property. This equates to 375,000 personal alarm users and 720,000 alerting device users in the population. Whilst the funding of personal alarms was split evenly between private and non-private funding, alerting devices were far more likely to be funded through non-private routes. This includes the NHS, Social Services, a landlord, a housing authority, sheltered housing, or a charity or voluntary organisation.

Our research shows that telecare is predominantly being used by the oldest-old age groups (70+), but especially among white females, highlighting its underuse as a source of support among large segments of the population. There was little difference in the levels of income of those who currently used telecare and those who did not, although the difference was greater among alerting devices users.

There are, however, very marked differences in wealth among those who used telecare devices and those who did not, which is likely to reflect social patterning of ill-health. Comparing private and non-privately funded telecare users, we found levels of income were a little higher among private users, but that average levels of wealth were significantly higher (over 30 times higher) than those whose telecare was funded through non-private means.

## **Housing and homes**

Personal alarm users were split evenly between home owners and tenants, whilst three-fifths of alerting device users rented, a finding that may indicate that telecare uptake is in part driven by local authorities installing devices among those living in social housing. Telecare users predominantly live alone. Four-fifths of personal alarm users and two-thirds of alerting device users lived alone. Those who did not live alone, more often lived with a partner, although this could also be with a child and/or grandchild.

Telecare users were less likely than non-users to own a mobile phone, a computer, or use the Internet and/or email, suggesting that telecare use is not impeded by a lack of experience of other common communications technologies.

## **Health and disability**

ELSA provides very thorough information on individual health and disability, enabling a good understanding of the physical and cognitive functioning of telecare users. Overall, telecare users were in poorer health across a range of health indicators compared to non-users, even after adjusting for age differences between the two groups. Telecare users were more likely to have difficulties associated with mobility than non-users. Personal alarm users were especially likely to have difficulty walking 100 yards, climbing a single flight of stairs without resting, pulling or pushing large objects, or lifting or carrying weights over ten pounds. Alerting device users also reported difficulty with these same activities, and in addition were more likely to report difficulty getting up from a chair after sitting for long periods, or climbing several flights of stairs without resting.

ELSA respondents were asked whether they had any difficulty performing a number of activities associated with daily living because of a physical, mental, emotional or memory problem. These were subdivided into tasks associated with self-care (Activities of Daily Living or ADLs), such as dressing, showering, and eating, and tasks associated with independent living within a community (Instrumental Activities of Daily Living or IADLs), such as preparing a hot meal and managing money.

Again telecare users report more difficulties on average than non-users, but for some activities the difference in prevalence was especially marked. Personal alarm users were

more likely to have difficulty walking across a room, bathing or showering, or using the toilet (including getting up or down) (ADLs), and doing work around the house or garden, shopping for groceries, or preparing a hot meal (IADLs). Again, alerting device users demonstrated similar difficulties, but also reported difficulties across other activities that included difficulty with dressing (ADLs), and difficulty taking medications or using a map to get around (IADLs).

Not surprisingly given the nature of the type of telecare devices being reported on, telecare users were more likely to report difficulty walking ¼ mile unaided, related issues with balance, dizziness or simple fear of falling, or the experience of a fall in the last 12 months. This was particularly evident among personal alarm users. Nine in ten personal alarms users reported at least some difficulty walking ¼ mile unaided, and two thirds reported that they were unable to do this. Among alerting device users, three-quarters reported having at least some difficulty, and two-fifths were unable to do this. Asked why they had difficulty walking, personal alarm users were far more likely to report having difficulty with balance, dizziness, fear of falling or fatigue than non-users. Alerting device users gave a somewhat broader range of answers, including for example, either pain or swelling in the leg or foot.

Telecare users and non-users reported similar levels of coronary vascular disease or other chronic illness, however there were some instances where the prevalence was higher among telecare users. For personal alarm users this includes a greater incidence of angina, coronary heart disease, heart murmurs, lung disease, osteoporosis, and cancer. For alerting device users, this includes angina, previous heart attack, heart murmurs, diabetes or high blood sugar, lung disease, cancer, Alzheimer's, and psychiatric problems, predominantly depression and anxiety.

We also examine the cognitive capabilities of telecare users, which include self-assessed memory, and two batteries of tests that provide a further (objective) measure of memory, and executive functioning. There was little difference between the self-reported memory of telecare users and non-users, although alerting device users reported slightly worse memories than non-users. However, telecare users had poorer scores on both an objective measure of memory function and executive functioning (which measures attention, initiation, mental flexibility, organisation, abstraction, planning and problem solving). These differences were also more evident among alerting device users.

## **Care and support**

In terms of financial support, over two-thirds of personal alarm users and half of alerting device users received Disability Living Allowance or Attendance Allowance. The largest single resource of reported personal support was from a daughter or son. Just under half of personal alarm users and a quarter of alerting device users received support from their children. Significant numbers – around one fifth of personal alarm users and one tenth of alerting device users – received support from social services and a similar proportion paid for private support. Social services support was typically received on a daily basis, whereas privately paid care was more often received weekly. About one fifth of personal alarm users and one third of alerting device users reported receiving no personal help.

Personal alarm users are also likely to use other aids, particularly those to aid walking, including a cane or walking stick, Zimmer frame or walker, or a manual or electric wheelchair. They are also more likely to have adaptations to their home, especially fitted handrails and bathroom modifications. Similar, although slightly lower prevalence of the use of other aids was reported by alerting device users, however, they were far more likely to have had other adaptations to their property. In addition to fitted handrails and bathroom modifications this includes widened doorways or hallways, ramps or street level entrances, accessible parking or drop off, or a lift.

There was also considerable overlap in personal alarm and alerting device use. Almost half of personal alarm users reported having an alerting device fitted to their home, and over one quarter of personal alarm users report using a personal alarm. However, it must be noted that in some instances individuals may be referring to the same device.

## **Potential telecare users**

In addition to exploring the lives of current telecare users, an important objective of 'Who Uses Telecare?' was to identify and describe potential telecare users among the population of non-users. This was done using information on the physical functioning of current users, and predict those most likely to qualify and perhaps benefit from the use of telecare, rather than a risk-based approach that social care workers may use to assess for telecare. The approach is not an exact science, involving as it does a significant degree of subjectivity. However the approach was underpinned by the expertise of a practitioner working in the field, and was also

tested empirically against the data. Because of the low prevalence of telecare use among those aged 50-59, the identification of potential users was also restricted to those aged 60 and over.

We estimate that around 38% of individuals aged 60+ may be potential telecare users, which equates to just over 4 million potential users. Around 45% of these individuals do not currently receive personal care, 45% receive informal care, 5% pay for private care, 3% receive care funded by their local authority, and 2% receive care from other sources.

The age demographics of potential users are similar to those of the 60 plus population in general, although they are a little older on average. Whilst over half of current telecare users were aged 70-89, the largest group of potential users are aged 60-69, at over 40%. Similar to current telecare users the largest proportion of potential users is among white females. However, there is an increase in the representation of males who represent two-fifths of potential users of telecare.

Potential telecare users have lower incomes and lower levels of wealth on average than the general 60 plus population. What is striking is that the figures are significantly higher than those for current telecare users. A similar contrast to current telecare users is the large majority of potential telecare users who own their own home and live with at least one other person. Two-thirds of current telecare users lived alone compared to one third of potential users.

The large majority of potential telecare users do not use any type of aid, such as a cane or wheelchair. Furthermore, very few have adaptations to their property to enable them independently. Similar to the general 60 plus population, and current telecare users, the most common adaptations among potential users were handrails and modifications to the bathroom.

There was also little difference between potential telecare users and the general 60 plus population in terms of commonly owned consumer durables. But of particular interest in this field, over four fifths of own a landline telephone, over half own a mobile phone, two-fifths own a computer and a further 15% use the internet, which suggests a degree of technical literacy already exists among potential users of telecare.

# 1. Introduction

**As the UK population ages, the need for care and support across the population is projected to rise.**

These trends pose several challenges to policymakers, both in managing the effects on public spending, and in enabling individuals with care needs to live independent lives in their own homes for as long as possible.

In this context, policymakers have shown increasing interest over the last decade in the potential of telecare and assistive technology.

Telecare is the remote monitoring of emergencies and lifestyle changes over time in order to manage the potential risks associated for individuals with care and support needs living independently in their own home. Telecare sensors can take many different forms, including falls detectors, property exit sensors and personal alarms. Telecare sensors link to a system that allows the user to be supported by an external monitoring centre, with further links through to health and social care professionals, and other support services. Telecare enables earlier interventions in the event of complications for users, whilst also assisting them in their re-ablement following an incident.

Telecare can prevent both the onset of need for care, as well as deterioration in need:

- ▶ Telecare can prevent need for more complex interventions or deterioration in a person's condition, through monitoring devices such as those that indicate that someone has fallen and requires immediate assistance;
- ▶ Telecare can be a cost effective option for meeting care needs by reducing the costs associated with personal care provided in a person's home, as well as through enabling individuals to remain in their own home – rather than residential care - for longer;
- ▶ Telecare can also reduce the burden on informal carers, thereby reducing the 'personal costs' of informal care provision for family members, such as non-participation in the labour market.

Given the potential economic and well-being benefits of telecare to service users, families and the state, policymakers in Westminster, the devolved governments and local authorities have sought to boost usage of telecare over the last decade through multiple strategies, grants and pilots.

## **Evidence on Telecare**

A recent literature review by the Department of Health provided an overview of research into telecare,<sup>1</sup> which typically falls into one of several categories:

- ▶ Research into the design and delivery of telecare products and monitoring services;
- ▶ Research into barriers to the adoption of telecare and mechanisms to overcome these barriers;
- ▶ Evaluations of the cost-effectiveness of telecare interventions in particular local authority areas.

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<sup>1</sup> Department of Health (2011) *Research and development work relating to assistive technology 2010-11*, London

A notable feature of telecare research is therefore the absence of social science evidence relating to telecare users and potential users. This gap is demonstrated by the lack of available information on basic descriptive topics relating to telecare users such as:

- ▶ Age and gender;
- ▶ Income and wealth;
- ▶ Tenure and housing.

The absence of this evidence is particularly significant given ongoing policy debates relating to telecare, notably:

- ▶ Targeting - how to connect telecare to potential users?;
- ▶ Funding - how should telecare devices and related services be paid for?

### **Who Uses Telecare?**

In this context, the Strategic Society Centre undertook a quantitative social science research project entitled: 'Who Uses Telecare?'. This report provides a summary of the findings of this research.

In the next chapter, the data and methodology deployed in the research are described.

In Chapter 3, 'Telecare Users in Society', we present descriptive evidence of the demographic and socio-economic profile of telecare users.

Chapter 4 reviews findings on the housing situation and homes of telecare users.

The fifth chapter – 'The Health and Disability of Telecare Users' – examines the health conditions, physical and cognitive functioning of older telecare users in England.

Chapter 6 reviews the care of telecare users, for example, their use of formal services alongside telecare.

Chapter 7 describes the findings of analysis to estimate the number and profile of potential telecare users in England.

## 2. Data and Methodology

**This chapter describes the data analysed in this research, and the methodology used.**

### DATA

The data used in this study comes from the English Longitudinal Study of Ageing (ELSA), a large-scale longitudinal panel study of people aged 50 and over and their partners, living in private households in England. The study began in 2002 collecting data on 12,100 individuals, with the same group of respondents being interviewed at two-yearly interviews to measure changes in their health, economic and social circumstances. As the study progresses the sample is also refreshed to replace the youngest cohorts and ensure the study remains representative of the population aged 50 and over in England. The sample was drawn from households that had previously responded to the Health Survey for England (HSE) between 1998 and 2004 and 2006.

ELSA explores the dynamic relationships between health and functioning, social networks and participation, and economic position as people plan for, move into and progress beyond retirement. It collects both objective and subjective data relating to health and disability, biological markers of disease, economic circumstance, social participation, networks and well-being. The most recent archived wave of ELSA, Wave 4 (2008) has been used for analysis in this study.

ELSA is the result of collaboration between University College London (UCL), the Institute for Fiscal Studies (IFS), and Natcen Social Research. Other academic collaborators based at the Universities of Cambridge, Exeter and East Anglia provided expert advice on specific modules. Funding for the first five waves of ELSA has been provided by the US National Institute on Aging, and a consortium of British Government departments.

### METHODOLOGY

#### Stage One: Identifying telecare users in ELSA

There are two points in the ELSA study where respondents are asked about telecare. First, respondents are presented with a list of disability aids<sup>2</sup>, which includes ‘a personal alarm’, and asked to identify any devices they currently use. The interviewer is also instructed to “only include personal alarms to call for assistance after falls etc.” and “exclude other types of personal security alarm such as rape or attack alarms”. An important point of note is that the question is only asked of those who report having at least one physical functioning, activity of daily living (ADL), or instrumental activity of daily living (IADL)<sup>3</sup> difficulty, which represents 57.4 % of the sample population. It is therefore likely to provide a conservative estimate of personal alarm users in the population.

Second, later on during the interview, ELSA respondents are presented with a list of possible housing adaptations, which include ‘alerting devices, such as button alarms’, and asked to identify those they currently have in their own home (regardless of whether or not they actually use them). This latter question is asked of all ELSA respondents. There are no follow up questions so we are limited in our knowledge of the exact kind of

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<sup>2</sup> See figure 44 for a full list of the disability aids included in the study.

<sup>3</sup> See figures 13 and 15 for a full list of the physical functioning, ADLs and IADLs included in the study.

device being referred to by individual respondents. The nature of the question wording emphasises alerting devices that require manual activation. However, in the absence of further data it may also include devices that are automatically activated, for example, a device that triggers an alert if a person fails to get out of bed in the morning.

There appears to be significant overlap in the type of devices being identified by these two separate questions. Furthermore, additional instructions given to the interviewers state that “personal alarms can be either fixed in the home or mobile alarms carried around by the respondent”, although this point is not necessarily conveyed to the respondent. Nevertheless the difference between the two questions remains sufficient for us to consider the two separately. The former appears emphasize mobile alerting devices used to contact support in an emergency, more often in the event of a fall. However, the latter emphasizes devices fixed to the home, which may also be a device used in the event of a fall, but is also likely to include a much broader range of devices.

These suspicions are borne out in our descriptive analyses, which show some substantive differences between the two groups of telecare users, supporting a view that these represent two overlapping yet different groups of users. This view is further reinforced in the second stage of our analysis when we use indicators of the physical and cognitive functioning of current telecare users to identify other potential users in the wider population. We are able to account for the large majority of personal alarm users (73%) using a small set of characteristics that measure difficulties with balance, dizziness, a propensity to falls, or the fear of falling (see page 24). However, we are able to capture fewer of the ‘alerting device’ users using the same measures, again suggesting greater heterogeneity in the types of device captured by this second question.

### **Further steps to identify recipients of alerting devices**

For the identification of alerting device users an additional further step is required. An alerting device is defined as a fixed device in the home. Therefore, in multiple occupancy households, before we are able to describe the characteristics of alerting device users we must first identify who is the most likely recipient of that device. ELSA is a household study in which all household members that fulfil the criteria for inclusion are interviewed. Therefore in most circumstances, we will have a lot of information on all occupants that will help us identify who the most likely direct user is.

In all respects the approach we use is the same procedure used in the second stage of our analysis, in which we attempt to identify other potential users of telecare among the population of non-users. The full detail of the procedure is presented below in a discussion of the methodology for stage two and will not be repeated here. But in short, we use information on the physical functioning of recipients who live alone, where there is no ambiguity over who the telecare user is to help define a set of physical functioning characteristics which we can then use to identify the most likely recipients in joint households.

Of course there are limitations to this approach, many of which are attributable to the overall procedure and are discussed in greater detail below. However, one specific limitation here is that by using the characteristics of telecare users living alone to predict the most likely recipient in joint households, we then disregard any

differences in the appropriateness of telecare use between joint households and single occupancy households. Nevertheless, this was the most appropriate strategy given the data available to us.

Where we were unable to identify a likely recipient using the defined set of indicators, which also included households in which were missing the necessary information from one or more occupants, then the household was removed from the analysis. Using this approach we were able to account for 351 of the 395 households (88.8 %) that had an alerting device fitted.

### **Describing telecare users (comparing telecare users with non-users)**

In the first stage of our analysis in which we describe current telecare users, we compare their characteristics against those of non-users to provide a useful benchmark, and use an appropriate statistical test to confirm whether any differences found are likely to also exist in the wider population from which the ELSA sample is drawn. Differences are considered statistically significant if the probability that a difference does *not* exist is less than 5 per cent, which means that we can be 95 per cent confident that it does.

In the case of personal alarms users it is important to note that the comparison non-user group are non-users who also report having at least one physical functioning, activity of daily living (ADL), or instrumental activity of daily living (IADL) difficulty because it was only these respondents who were asked whether they used a personal alarm. Because those who report none of these difficulties were not asked we cannot be certain that they do not use personal alarms and therefore have to exclude them from our analysis.

The comparison group of non-users has been weighted to match the age structure of telecare users<sup>4</sup>. This is an important step because age is strongly related to both telecare use and physical and cognitive functioning. By adjusting for age we are able to obtain a truer understanding of the differences between telecare users and non-users, which is not attributable to age. In addition, all data has been weighted to reflect the wider population of older people in England.

### **Identifying private and non-privately funded telecare users**

In stage one we also explore differences between those whose telecare is privately and non-privately funded. Private funded telecare users are those whose telecare is paid for by the recipient or other family members. Non-private are those whose telecare is funded by the social services (local authorities), the NHS, Social Services, a care home, a landlord, a housing authority, or a charity or voluntary organisation. In practice, the majority of non-private funded telecare users have their devices paid for by social services, and a full breakdown of the prevalence of different funding sources is provided in the Appendix.

Some of the respondents who report having an alerting device fitted to their property state that this was fitted to their property prior to when they moved in and do not specify a funder. These individuals (54 cases) are excluded from the analysis comparing private and non-private funded users.

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<sup>4</sup> Separate weights were constructed for the personal alarm and alerting device users analysis

## Comparing private and non-privately funded telecare users

The sample sizes for this section of analysis are especially small.<sup>5</sup> As a result it is far more difficult to identify differences in the characteristics of private and non-privately funded telecare users. It is a general rule that differences have to be of increasing magnitude as sample sizes get smaller for us to be confident that they also exist in the wider population (i.e. for a statistical test to register a difference as statistically significant). Whilst we only discuss those differences that are statistically significant it is worth noting that we may have identified more statistically significant differences had the sample sizes have been bigger.

### Stage Two

In stage two we identify and describe potential telecare users among the population of non-users. We achieve this by using information on the physical functioning of current users to predict those most likely to qualify and perhaps benefit from telecare. Whilst this approach is not an exact science (it involves a significant degree of subjective reasoning) the approach is underpinned by the expertise of a practitioner working in the field, and is also tested empirically against the data. Because ELSA only samples those living in private residential accommodation, our analysis also excludes those in residential care whose move into residential care could have been prevented by the use of telecare.

We began the procedure by selecting a suitable set of indicators informed by the design of the telecare questions in ELSA, common uses for telecare in the UK today, and the guidance of a practitioner working the field. Then through a process of trial and elimination, using an in-depth exploratory analysis of the data we moved from a broader set of indicators to a final set, which are those we use to identify other potential telecare users in the population. This final selection was validated by its ability to account for practically all of the current personal alarm users in ELSA as well as the large majority of alerting device users<sup>6</sup>.

The final set of indicators was sorted into five clusters pertaining to the type of difficulties or care needs they represented, and also in order of the proportion of telecare use they captured. The first cluster, which covers a key use of telecare among the elderly population comprise indicators that reflect a propensity for falls. This includes difficulties with balance, light-headedness, dizziness, the experience of two or more falls in the last 12 months, or the experience of a fall that required medical treatment. This first cluster alone was able to account for 73% of personal alarm users and 51% of alerting device users.

The second cluster comprises two mobility difficulties: difficulty with walking across a room, or difficulty with getting up from a chair after sitting for a long period. Including these further two indicators enabled us to account

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<sup>5</sup> For personal alarm users this amounts to 216 cases, for alerting device users the sample size is 409.

<sup>6</sup> This difference, in the capacity of the set of indicators to capture these two different groups of telecare users, fits with our expectations. The question wording for personal alarms suggests quite a narrow definition of telecare use, namely to call for support in the event of a fall. Alerting devices on the other hand appear to reflect a much broader range of telecare use and is therefore expected to capture a more heterogeneous group of users both in terms of their physical functioning and respective care needs.

for 88% of personal alarm users and 70% of alerting device users. A third cluster captures difficulties associated with self-care, and include difficulty getting in or out of bed, difficulty bathing or showering, or difficulty using the toilet (including getting up or down). Including this third cluster enabled us to account for 93% of personal alarm users and 75% of alerting device users.

At this point we were satisfied that we had been able to account for the large majority of personal alarm users and that those that remained unaccounted (7%) were likely to be quite heterogeneous in their use of personal alarms.<sup>7</sup> It was difficult to account for this residual group without the inclusion of a large number of further indicators of physical or cognitive functioning. As a result we were far less confident in accepting that these additional indicators represented the true reason an individual used a personal alarm.

Using two further clusters of indicators we able to increase the proportion of alerting device users accounted for to 86%. The fourth cluster captures difficulties with living independently in a community, including difficulty communicating (speech, hearing or eyesight), difficulty making telephone calls, or difficulty recognising when in physical danger. A fifth and final cluster captures cardiovascular diseases, which for some, may require easy access to emergency support, and include stroke, diabetes or high blood sugar, angina, congestive heart failure, heart murmurs, abnormal heart rhythm, or the previous experience of a heart attack. However, whilst these further indicators may represent legitimate reasons for using an alerting device, and in addition captured a further 10% of users, we are far less confident of their certainty as the reason why the individual was using telecare.

For this reason we only used indicators from the first three clusters to estimate our population of potential telecare users among the older population of non-users in England. That is, we only included individuals who demonstrated a proneness to falls, or a difficulty with the specific kinds of mobility function or self-care noted above. In addition, as figure 1 in Chapter 3 shows, there were very few individuals aged under sixty who used telecare in 2008. Therefore we also limited our estimation of potential telecare users to those aged 60 or older. Imposing these restrictions means that we are likely to have made a conservative estimate of the population of potential users that exists in the wider population of non-users, and restricted our definition to a particular kind of telecare use. Nevertheless, at the same time this allows us to have far more confidence in our final projections.

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<sup>7</sup> It is also worth noting that there is likely to be some error in the measurement of both telecare use and physical functioning (termed measurement error) which is also likely to contribute to the size of any residual group of individuals unaccounted for. Attempting to account for all cases would therefore run the risk of over-fitting the model to the data, meaning that it is less likely to hold in the wider population and more likely to be specific to nuances of data collection process.

## 3. Telecare Users in Society

**This chapter and subsequent chapters outline the characteristics of telecare users in England in 2008 using recent data from the English Longitudinal Study of England (ELSA).**

The study distinguishes between two types of telecare use: personal alarms which are predominantly mobile devices used to call on assistance in the event of an emergency (such as a fall), and alerting devices that are devices fixed to the home. There is significant overlap in the type of devices described as well as their use. Around 48% of personal alarm users also report they have an alerting device fixed in their home, and 28% of individuals with alerting devices also report having personal alarms. However, the differences between the two types of telecare use remain significant enough justify treating them separately.

In describing the characteristics of telecare users we compare them to those of non-users so as to provide a useful benchmark. As the relevant question on personal alarms was only asked to respondents who reported a certain level of disability, the comparison group for personal alarm users are those who report a similar level of disability, and explains our need for two different comparison groups of non-users when describing the two different groups of telecare users.

Where they exist, we also report statistically significant and insightful differences between those whose telecare is private and non-privately funded.

Except for the comparison of age between the population of telecare users and non-users, the results below have been adjusted to take account of the significant differences in ages between users and non-users. This adjustment means that we can discount age as a driving factor in the differences we see across the other measures we examine. For further detail on this and other aspects underlying our research please refer to the methodology section in Chapter 2. All comparisons between telecare users and non-users are statistically significant at  $p < .05$  unless stated otherwise.

### 3.1 Telecare users in the 50+ population in England

The following table sets out the prevalence of personal alarm and alerting device users in England in 2008:

## Prevalence of Telecare among older population (aged 50+)

	Personal alarm	Alerting devices (individuals)
Overall prevalence	2.2%	4.2 %
Private funding	53 %	31.3 %
Non-private funding	49.5 %	60.1 %
Already in property	n/a	13.6 %

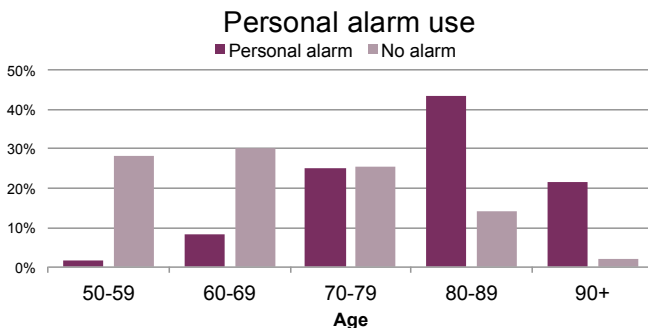
**Table 1: Prevalence of telecare among older population**

Around 2.2%<sup>8</sup> of individuals aged over 50 in England use a personal alarm, and 4.2%<sup>9</sup> use alerting devices. Half of personal alarms are paid for privately, while among alerting device users, around one third of users fund the devices themselves. 14% of individual reported that alerting devices were already fitted to their property when they moved in and did not report the source of funding.

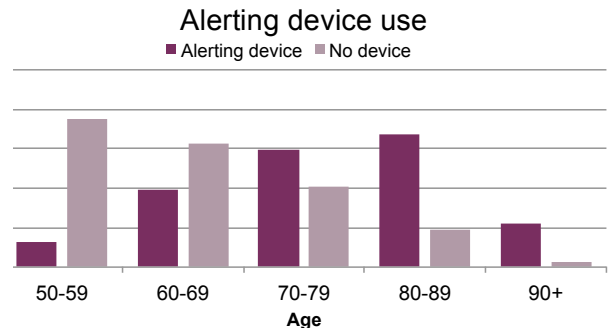
### 3.2 Demographic profile<sup>10</sup>

Telecare users are much older on average than non-users (figures 1 and 2). 19% of personal alarm users and 74% of alerting device users are aged seventy or above. Overall, personal alarm users are older than alerting device users on average. 21% of personal alarm users are aged 90+, compared to 11% of alerting device users.

## Age group



**Figure 1: Age of telecare users: personal alarms**



**Figure 2: Age of telecare users: alerting devices**

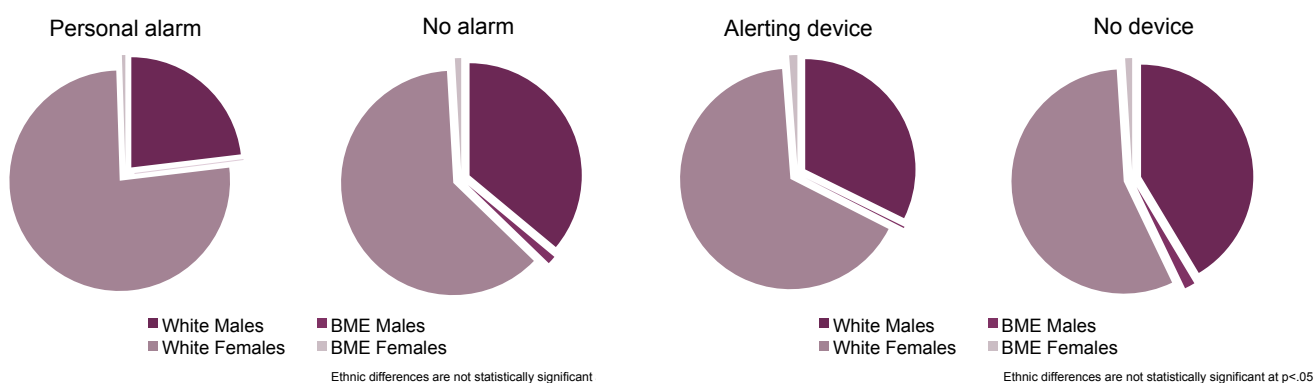
Telecare usage varies between genders and across different ethnic groups. Figure 3 and 4 below show the proportion of personal alarm and alerting device users by gender and ethnicity (White or Black and Minority Ethnic) compared to non-users in the population.

<sup>8</sup> Only those who report having one or more mobility, activity of daily living, or instrumental activity of daily living difficulty (57.4 % of the population) were asked the question on personal alarm use. This figure is therefore likely to be a conservative estimate. On the other hand, our research demonstrates a greater propensity for difficulties among telecare users as would be expected, therefore we are likely to have captured the large majority of users in the population

<sup>9</sup> This figure represents the proportion of individuals that we were able to confidently identify as alerting device users in the ELSA data and therefore is also likely to be a conservative estimate (see Chapter 2 for further detail). The actual proportion of private *households* occupied by those aged 50 and above that had an alerting device fitted (and for which the figure is more accurate) was 6 %. Our figure of 4.2 % individuals above captures 88.8 % of these households, or 5.3 % of households occupied by those age 50 and above.

<sup>10</sup> Overall weighted sample sizes for this section are Personal alarm users: 224 and non-users: 5407; Alerting device users: 409 and non-users: 9277

# Gender and ethnicity



**Figure 3: Gender and ethnicity of telecare users: personal alarms**

**Figure 4: Gender and ethnicity of telecare users: alerting devices**

By far the largest group of telecare users are White Females, comprising over three-quarters of personal alarm users and two-thirds of alerting device users<sup>11</sup>. Usage of telecare is particularly low among BME Males when compared to the wider population of individuals with physical or cognitive impairments, although this difference is not statistically significant<sup>12</sup>.

## 3.3 Income

The average (mean) income of personal alarm users is £242.30 per week (table 2) and does not differ statistically from the incomes of non-users. The median income of personal alarm users, which some consider to be a better indication of average income is £218.80 a week (table 2). Although the average (mean) income is higher among those whose telecare is privately-funded, the median incomes differs very little from those whose alarms are non-privately funded (table 2).

## Weekly equivalised income

	Personal alarm	No alarm
<b>Mean amount *</b>	<b>£ 242.3</b>	<b>£ 261.0</b>
Standard error	£ 9.6	£ 4.4
95 <sup>th</sup> percentile	£ 463.2	£ 542.3
75 <sup>th</sup> percentile	£ 295.6	£ 300.3
<b>50<sup>th</sup> percentile (median)</b>	<b>£ 218.8</b>	<b>£ 203.8</b>
25 <sup>th</sup> percentile	£ 162.4	£ 144.3

\* This difference is not statistically significant at p<.05

	Non-private	Private
<b>Mean amount</b>	<b>£ 234.4</b>	<b>£ 250.0</b>
Standard error	£ 13.9	£ 14.0
95 <sup>th</sup> percentile	£ 420.9	£ 497.0
75 <sup>th</sup> percentile	£ 274.8	£ 308.5
<b>50<sup>th</sup> percentile (median)</b>	<b>£ 221.4</b>	<b>£ 215.9</b>
25 <sup>th</sup> percentile	£ 152.7	£ 168.9

**Table 2: Weekly equivalised income: personal alarms**

<sup>11</sup> Note that there are also more women than men among non-users. This is because women are more likely to survive to older ages, a point which is further accentuated by the age adjustment of the non-user group. An unadjusted comparison would show a more even balance of men and women in the non-user group suggesting a greater difference in the gender profile of telecare users and non-users.

<sup>12</sup> The very small sample sizes for BME groups means the power to test for statistically significant differences is particularly poor.

# Weekly equivalised income

	Alerting device	No device
<b>Mean amount</b>	<b>£ 234.0</b>	<b>£ 287.4</b>
Standard error	£ 6.1	£ 4.1
95 <sup>th</sup> percentile	£ 415.0	£ 642.6
75 <sup>th</sup> percentile	£ 286.7	£ 321.1
<b>50<sup>th</sup> percentile (median)</b>	<b>£ 207.1</b>	<b>£ 215.9</b>
25 <sup>th</sup> percentile	£ 156.1	£ 148.5

	Non-private	Private
<b>Mean amount</b>	<b>£ 223.0</b>	<b>£ 254.5</b>
Standard error	£ 7.5	£ 12.7
95 <sup>th</sup> percentile	£ 392.1	£ 595.2
75 <sup>th</sup> percentile	£ 274.3	£ 315.7
<b>50<sup>th</sup> percentile (median)</b>	<b>£ 205.5</b>	<b>£ 224.8</b>
25 <sup>th</sup> percentile	£ 149.0	£ 169.2

**Table 3: Weekly equivalised income: alerting devices**

Similar levels of income are found among alerting device users (table 3)

## 3.4 Non-pension wealth

Although personal alarm users have a similar level of income to non-users, their levels of non-pension wealth (including property and liquid financial wealth) are much lower on average. The mean wealth (£139,438) and median wealth (£60,649) of personal alarm users are 40% and 60% lower than the equivalent figures for non-users (table 4).

# Total (non-pension) wealth

	Personal alarm	No alarm
<b>Mean amount</b>	<b>£ 139,438</b>	<b>£ 218,110</b>
Standard error	£ 16,772	£ 5,553
95 <sup>th</sup> percentile	£ 423,179	£ 677,410
75 <sup>th</sup> percentile	£ 205,277	£ 298,172
<b>50<sup>th</sup> percentile (median)</b>	<b>£ 60,649</b>	<b>£ 161,120</b>
25 <sup>th</sup> percentile	£ 4,000	£ 12,000

	Non-private	Private
<b>Mean amount</b>	<b>£ 69,216</b>	<b>£ 215,356</b>
Standard error	£ 12,404	£ 31,260
95 <sup>th</sup> percentile	£ 301,419	£ 607,466
75 <sup>th</sup> percentile	£ 111,047	£ 259,191
<b>50<sup>th</sup> percentile (median)</b>	<b>£ 6,881</b>	<b>£ 174,070</b>
25 <sup>th</sup> percentile	£ 2,604	£ 23,007

**Table 4: Total non-pension wealth: personal alarms**

There is also a very discernible difference in the average non-pension wealth of those who pay for personal alarms themselves, compared to those whose devices are non-privately funded. The figures for mean wealth (£69,216) and median wealth (£6,881) for non-privately funded users are 70% and 95% lower than the equivalent figures for those who pay for the alarms themselves (table 4).

### Alerting device users

Similar to personal alarm users, users of alerting devices also have lower levels of non-pension wealth on average than non-users, although the differences are much more marked. The mean wealth (£106,378) and median wealth (£10,283) of alerting device users are 60% and 95% lower than the equivalent figures for non-users (table 5). The median wealth of alerting device users is also significantly lower, more than 80%, than the median wealth of personal alarm users.

# Total (non-pension) wealth

	Alerting device	No device
<b>Mean amount</b>	<b>£ 106,378</b>	<b>£ 269,289</b>
Standard error	£ 9,370	£ 5,211
95 <sup>th</sup> percentile	£ 460,291	£ 747,180
75 <sup>th</sup> percentile	£ 155,146	£ 327,381
<b>50<sup>th</sup> percentile (median)</b>	<b>£ 10,283</b>	<b>£ 192,816</b>
25 <sup>th</sup> percentile	£ 1,500	£ 77,000

	Non-private	Private
<b>Mean amount</b>	<b>£ 47,088</b>	<b>£ 226,441</b>
Standard error	£ 8,034	£ 25,547
95 <sup>th</sup> percentile	£ 293,080	£ 700,646
75 <sup>th</sup> percentile	£ 18,000	£ 298,065
<b>50<sup>th</sup> percentile (median)</b>	<b>£ 3,950</b>	<b>£ 153,321</b>
25 <sup>th</sup> percentile	£ 988	£ 59,752

**Table 5: Total non-pension wealth: alerting devices**

Differences between the wealth of private and non-privately funded alerting device users are similar to those of personal alarm users with private users showing markedly higher levels of wealth on average (table 5).

## Telecare Users in Society: The Numbers

The ELSA data used in this analysis is representative of the 50+ population in England in 2007-08. Since the sample covers private residential households only, and does not include institutional settings (e.g. hospitals residential care), the base sample is 17,066,773. Using these figures we are able to estimate that:

Around 375,000 people used personal alarms and 715,000 used alerting devices in England in 2007-08, among the 50+ population.

Roughly 199,000 people paid for their personal alarms privately, and 224,000 paid for alerting devices privately.

Around 165,000 people aged 80-89 used a personal alarm.

# 4. The Housing and Homes of Telecare Users

This chapter reviews findings relating to the homes, housing conditions and living situation of telecare users.

## 4.1 Tenure

The number of homeowners to tenants is evenly balanced among personal alarm users with 56% owning their own home, and 43% living in rented accommodation. This compares to non-alarm users who are 70% homeowners and 27% tenants (figure 5). Unsurprisingly there are significant differences among those whose personal alarms are non-privately funded and those who pay themselves, with the former group split 33% homeowners to 66% tenants, and the latter 79% homeowners to 19% tenants (figure 5).

### Tenure

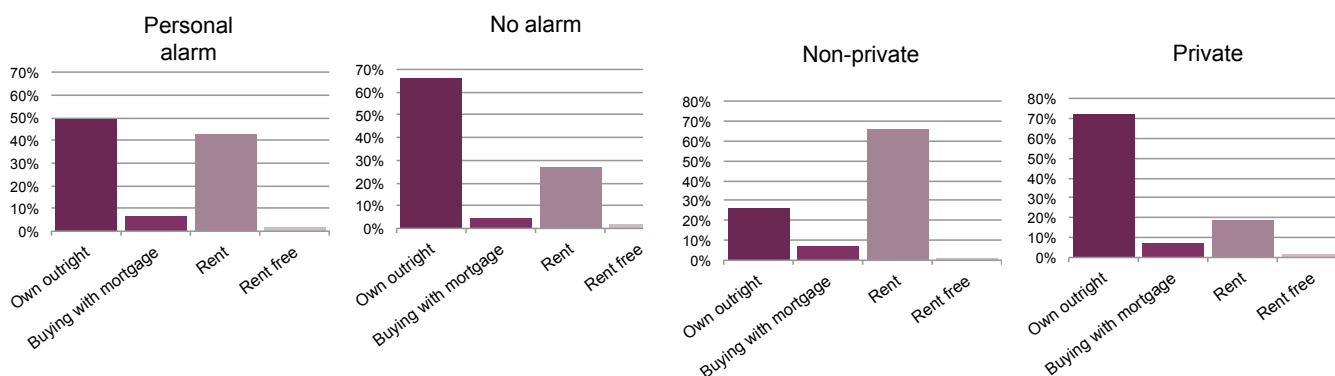


Figure 5: Tenure: personal alarms

Among alerting device users (figure 6), many more are tenants, compared to personal alarm users (figure 3). Around 38% own their own home, and 61% rent. This compares to non-users of whom over 70% own their own home and 18% rent (figure 6). The greater ratio of tenants to homeowners among alerting device users may indicate that telecare uptake is in part driven by local authorities installing devices among those living in social care housing. It may also suggest that some individuals move into rented property where an alerting device is already installed.

# Tenure

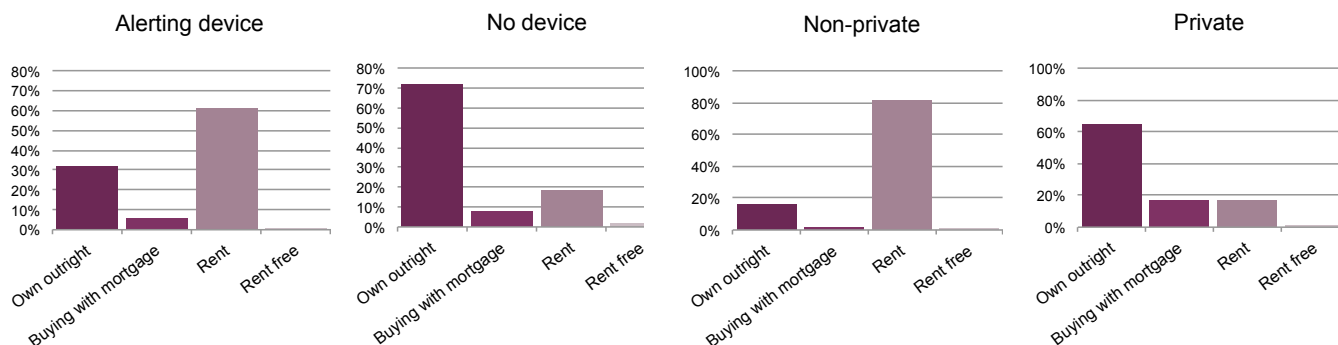


Figure 6: Tenure: alerting devices

## 4.2 Telecare Users: Who do they live with?

### Personal Alarms

Personal alarm users predominantly live alone. Around 80% of personal alarm users live alone, 15% live with one other person and 5% live with two or more others. This compares to 47% of non-users who live alone (figure 7). Among personal alarms users who did live with another person this may be with a partner, child and in some cases also grandchildren. What figure 8 particularly highlights, however, is that the difference in occupancy status between personal alarms users and non-users is predominantly driven by partnership status.

### Total number of people in the household

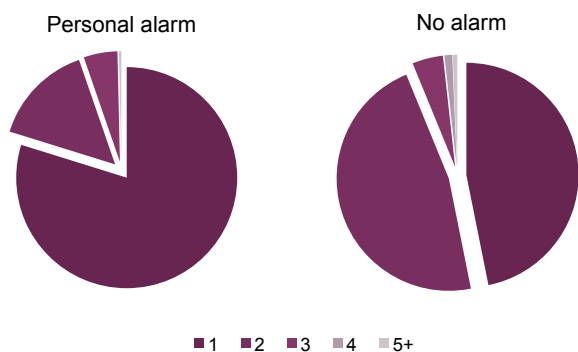
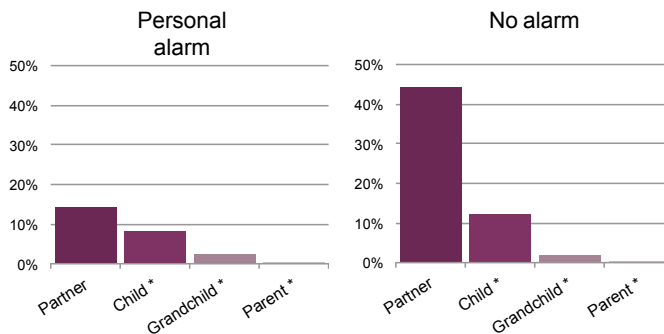


Figure 7: Number of people in household: personal alarms

### Lives with...



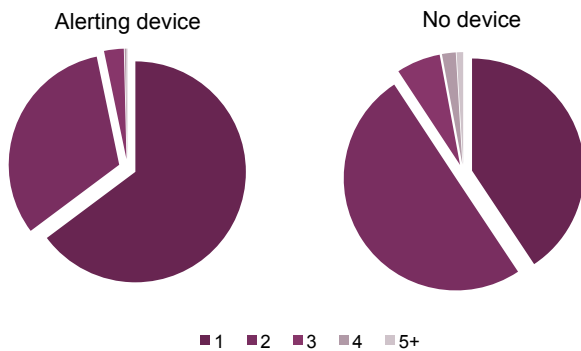
\* This difference is not statistically significant at p<.05

Figure 8: Identity of co-habitants: personal alarms

### Alerting Devices

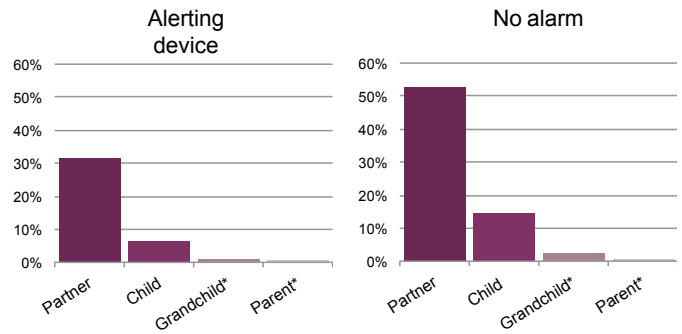
Alerting device users are moderately less likely to live alone, although the figure is still high compared to non-users (65% compared to 41% of non-users) (figure 9). Around 32% of those with alerting devices live with one other person, which appears to be predominantly a partner (figures 9 and 10). Again the difference in the living arrangements of alerting device users and non-users appears to be driven by partnership status.

## Total number of people in the household



**Figure 9: Number of people in household: alerting devices**

## Lives with...



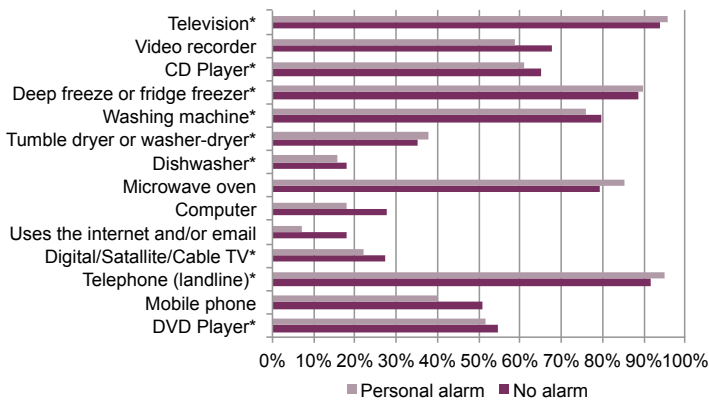
\* This difference is not statistically significant at p<.05

**Figure 10: Identity of co-habitants: alerting devices**

### 4.3 Owned devices

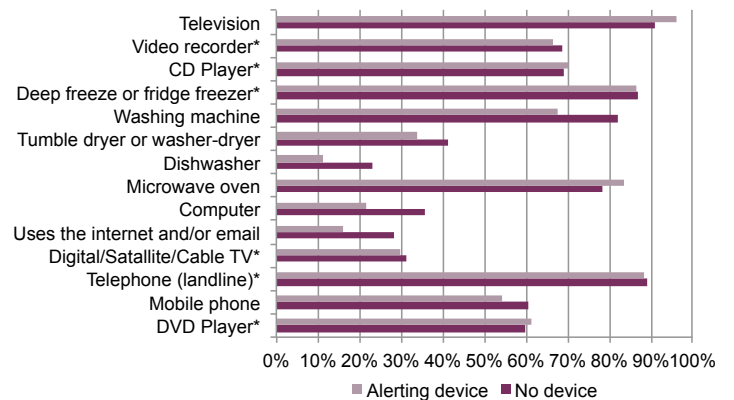
Figures 11 and 12 present the ownership of common household devices among personal alarm and alerting device users, compared to non-users.

## Owens the following devices



\* This difference is not statistically significant at p<.05

**Figure 11: Ownership of household devices: personal alarms**



\* This difference is not statistically significant at p<.05

**Figure 12: Ownership of household devices: alerting devices**

The list of consumer durables above are often used in surveys to provide a measure of material hardship, enabling us to identify whether certain groups are less likely to own commonly held consumer durables compared to the average household and therefore demonstrate greater material hardship.

However, in a study exploring telecare use the list provides some further insight into the experience individuals have with other forms of technical and communications devices, enabling us to examine whether telecare users demonstrate a greater connectedness with technology.

Looking at figures 11 and 12 it appears there are few differences in the ownership of consumer durables between users and non-users for both personal alarms and alerting devices. Interestingly, telecare users are less likely than non-users to own a mobile phone or a computer, or use the Internet and/or email, suggesting that telecare use is not impeded by the non-use of these common communications technologies. Conversely, this

may have implications for the design and development of future telecare products that involve these technologies.

### **Housing and Homes of Telecare Users: The Numbers**

The ELSA data used in this analysis is representative of the 50+ population in England in 2007-08. Since the sample covers private residential households only, and does not include institutional settings (e.g. hospitals residential care), the base sample is 17,066,773. Around 375,000 people used personal alarms and 715,000 used alerting devices in England in 2007-08, among the 50+ population. Using these figures we are able to estimate that:

- There are 185,000 personal alarm users who own their home outright, and 160,000 who rent.
- Around 230,000 alerting device users own their home outright, but 440,000 rent.
- Around 26,000 personal alarm users are on the Internet, but 150,000 own a mobile phone.
- Around 115,000 alerting device users are on the Internet while 385,000 have a mobile phone.

# 5. The Health and Disability of Telecare Users

This chapter reviews findings on the physical functioning and health conditions of telecare users.

## 5.1 Physical functioning

Appropriate for a study of individuals aged 50 and above, ELSA provides a very thorough investigation of an individual's health and disability. In this chapter we examine the following areas of health: difficulties with physical and cognitive functioning (more often termed mobility, activities of daily living (ADLs) and instrumental activities of daily living (IADLs)); difficulties with walking unaided; experiences of falls; subjective general health; coronary heart diseases (CVDs); chronic disease; memory and concentration; and executive functioning.<sup>13</sup>

All comparisons between telecare users and non-users throughout this study have been adjusted to take account of the significant difference in age between the two groups. This is particularly important in the examination of health and disability because age is strongly related to both telecare use and physical and cognitive functioning. By adjusting for age we are able to ensure that differences identified between telecare users and non-users are not attributable to age. For further details please refer to the methodology section in Chapter 3.

## Mobility, arm function, and fine motor function

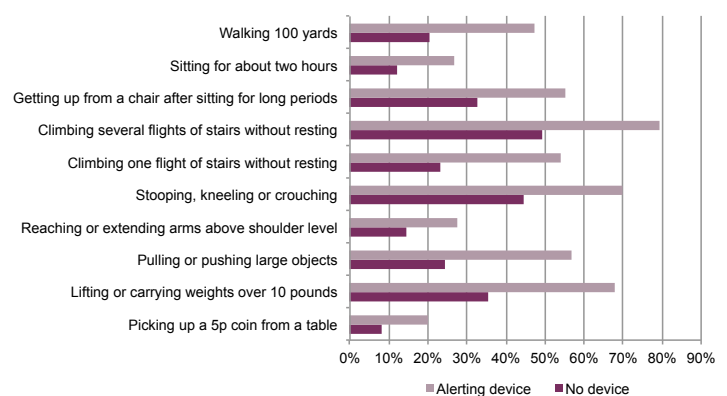
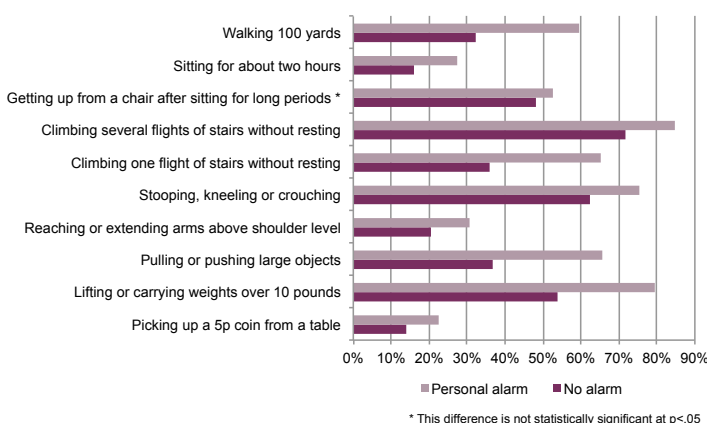
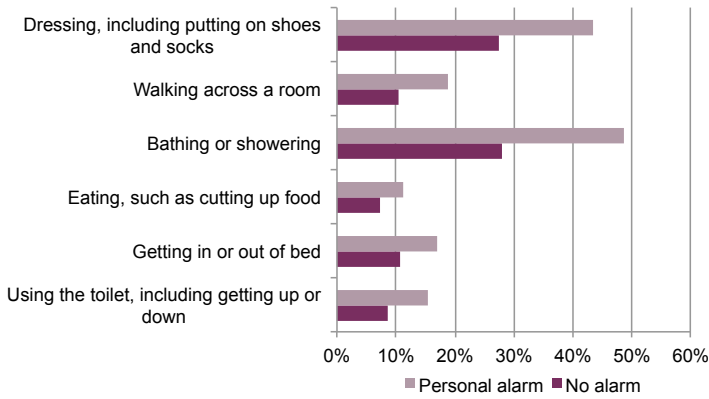


Figure 13: Mobility, arm function and fine motor function: personal alarms

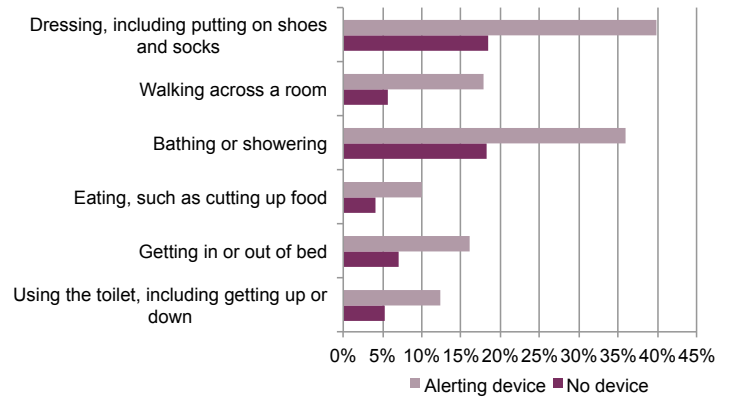
Figure 14: Mobility, arm function and fine motor function: alerting devices

<sup>13</sup> The term 'executive function' refers to a number of cognitive control processes, which include attention, initiation, set shifting or mental flexibility, organisation, abstraction, planning and problem solving.

# Activities of daily living (ADLs)



**Figure 15: Activities of daily living: personal alarms**



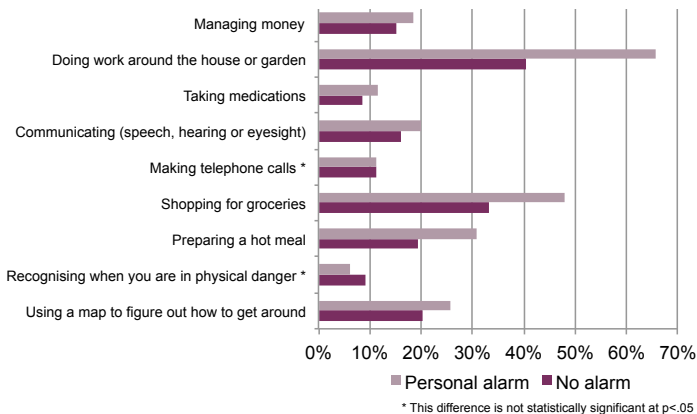
**Figure 16: Activities of daily living: alerting devices**

Personal alarm users and alerting device users reported a greater number of mobility difficulties than non-users. On average, personal alarm users report 5.6 mobility difficulties compared to 3.9 among a comparable group of non-users. For alerting device users the respective figures are 5.0 and 2.6. Figures 13 and 14 present the individual prevalence rates for each of the mobility difficulties separately, again comparing telecare users with non-users. Overall, these demonstrate a significant level of difficulty with mobility as might be expected for individuals of their age. However, some of these difficulties are notable for the differences they highlight between telecare users and non-users. Personal alarm users are especially likely to have difficulties walking 100 yards (60%), climbing a single flight of stairs (65%), pulling or pushing large objects (66%), or lifting or carrying weights over ten pounds (80%) compared to non-users (the respective figures for non-users are 32%, 36%, 37% and 54%). Alerting device users demonstrate similar differences to non-users across these same markers of mobility. But in addition, alerting device users are far more likely to have difficulties than non-users across the range of measures, for example, getting up from a chair after sitting for long periods (55%), and climbing several flights of stairs without resting (79%) compared to non-users (with respective figures of 33% and 49%).

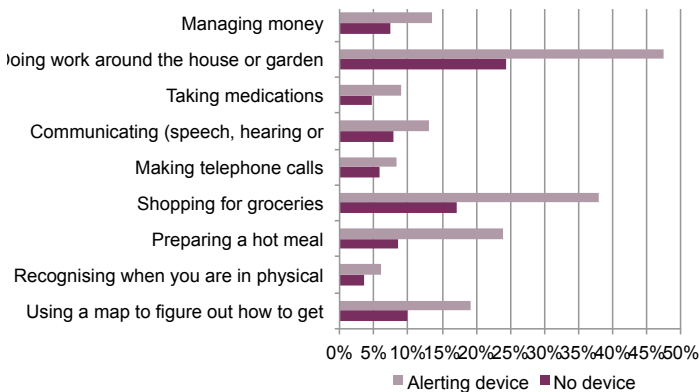
Respondents were also asked whether they had any difficulties performing a number of activities associated with daily living because of a physical, mental, emotional or memory problem. These were subdivided into tasks associated with self care (Activities of Daily Living or ADLs), such as dressing, showering, and eating, and tasks associated with independent living within a community (Instrumental Activities of Daily Living or IADLs), such as preparing a hot meal and managing money. Figures 15 and 16 present the prevalence of reported difficulties with activities of daily living. Again telecare users are more likely to report difficulties, however some differences between telecare users and non-users are again particularly marked.

Personal alarms users are more likely to have difficulty walking across a room (19%), bathing or showering (49%), or using the toilet, including getting up or down (15%) than non-users (the respective figures non-users are 10%, 28% and 9%). Again, alerting device users similarly demonstrate significant differences across these same activities, but also show marked differences across the remaining activities. In addition, both groups of telecare users are more likely to experience multiple difficulties than non-users. On average, personal alarm users experienced 1.5 difficulties with activities of daily living compared to 0.9 difficulties experienced by non-users, and alerting device users experienced an average of 1.3 difficulties compared to 0.6 by non-users.

# Instrumental activities of daily living (IADLs)



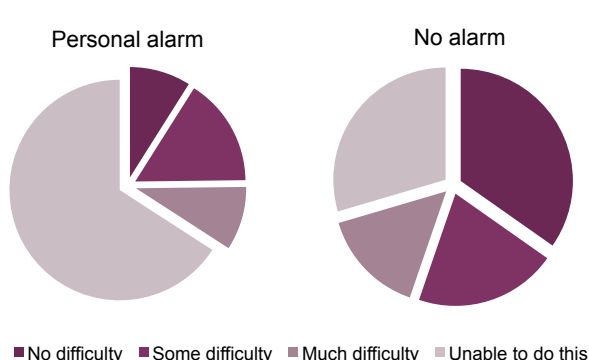
**Figure 17: Instrumental activities of daily living: personal alarms**



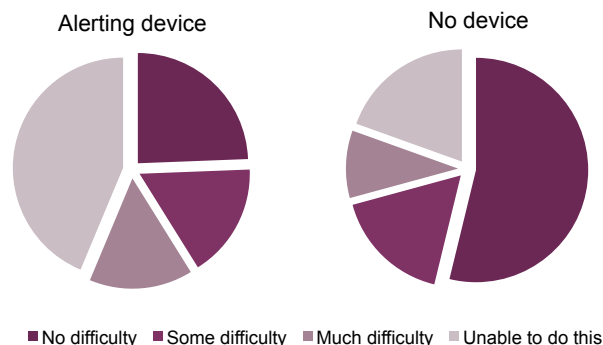
**Figure 18: Instrumental activities of daily living: alerting devices**

Figures 17 and 18 show the prevalence of difficulties with instrumental activities of daily living among telecare users compared with non-users. Key difficulties for personal alarm users when compared to non-users were doing work around the house or garden (66%), shopping for groceries (48%) and preparing a hot meal (31%). The relevant figures for non-users were 40%, 33% and 19%. Again, alerting device users demonstrated similar differences across these cited activities, but in addition were also far more likely to have difficulty taking medications (10%) or using a map to get around (19%). In addition, personal alarm users were more likely to experience multiple difficulties than non-users, with an average of 2.3 difficulties on average compared to 2.1. The respective figures for alerting device users are 2.2 and 1.7 for non-users.

## Difficulty walking ¼ mile unaided



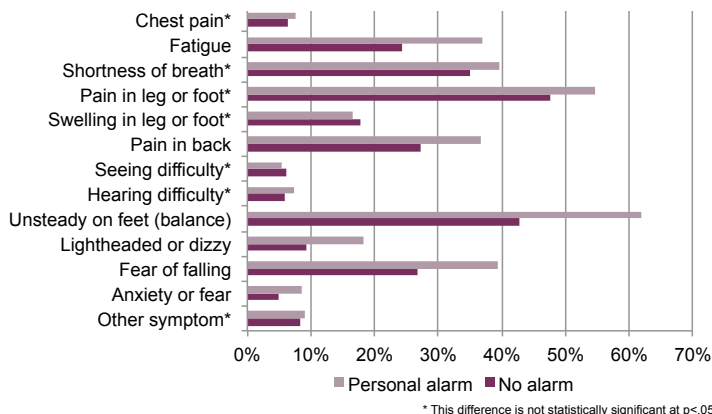
**Figure 19: Difficulty walking ¼ mile unaided: personal alarms**



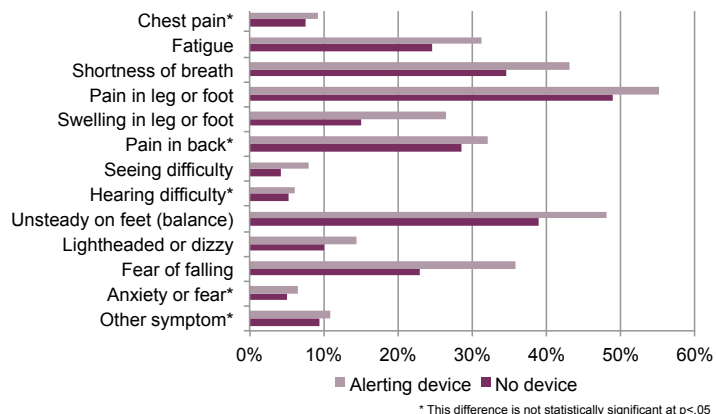
**Figure 20: Difficulty walking ¼ mile unaided: alerting devices**

Nine in ten personal alarms users reported at least some difficulty walking ¼ mile unaided, and two thirds reported that they were unable to do this. This compares to two thirds of non-users who reported at least some difficulty, and one third who reported being unable to do this (figure 19). Alerting device users were less likely to report difficulty with walking than personal alarm users, however they were also far more likely to do so than non-users. Three quarters of alerting device users reported at least some difficulty walking compared to just under a half of non-users, and two-fifths reported that they were unable to do this compared to one-fifth of non-users (figure 20).

# Conditions causing difficulties



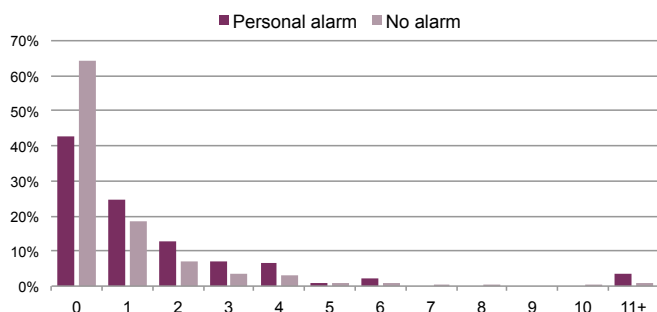
**Figure 21: Conditions causing difficulty walking: personal alarms**



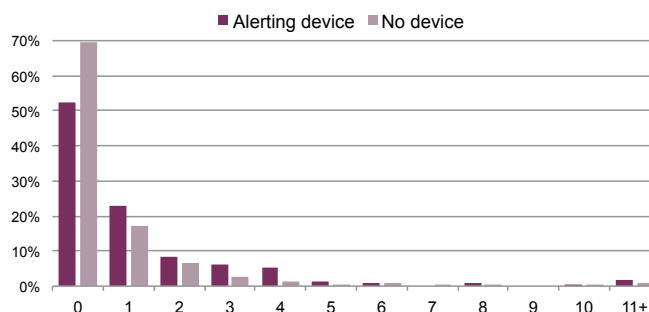
**Figure 22: Conditions causing difficulty walking: alerting devices**

Figure 21 and 22 show the reasons for this difficulty given by respondents who reported at least some difficulty with walking. Compared to non-users, those with personal alarms were more likely to report fatigue (37% compared to 24%), being unsteady on their feet (62% compared to 43%), lightheaded or dizziness (18% compared to 9%), a fear falling (39% compared to 27%), or a general anxiety or fear (9% compared to 5%). The differences between alerting device users and non-users were less marked than they were for personal alarm users. Nevertheless, there were noteworthy differences for lightheaded or dizziness (14% compared to 10%) and fear of falling (36% compared to 23%), and in addition, for having a swelling in the leg or foot (26% compared to 15%).

## How many falls in the last year (60+)



**Figure 23: How many falls in the last year (60+): personal alarms**



**Figure 24: How many falls in the last year (60+): alerting devices**

Personal alarm users and alerting device users were far more likely to have had a fall or multiple falls in the last 12 months compared to non-users (figure 23). On average, personal alarms users experienced 1.5 falls in the last 12 months compared to 0.8 falls among non-users. Alerting device users had 1.2 falls on average compared to 0.7 falls among non-users (figure 24). In addition, if a personal alarm user did have a fall, they were also more likely to have required medical intervention than non-users (40% compared to 33%). There were no differences in the proportion of alerting device users and non-users requiring medical intervention, which was approximately one third of those who had experienced a fall (results not shown).

# Self-reported health

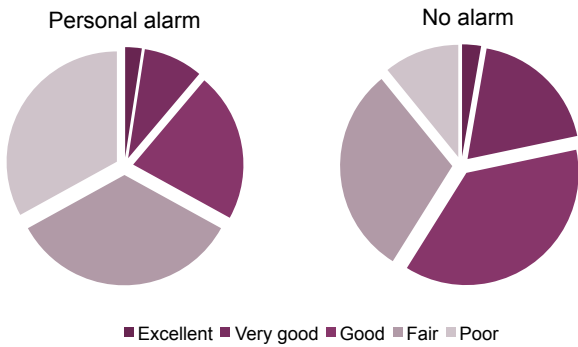


Figure 25: Self-reported health: personal alarms

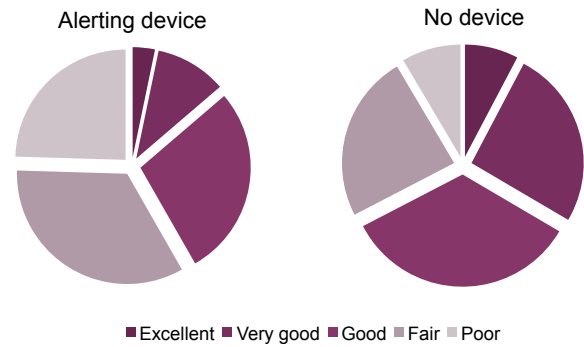


Figure 26: Self-reported health: alerting devices

Respondents were also asked to rate their own level of health with responses also showing very clear differences between telecare users and non-users. One third of personal alarm users rated their health as 'poor' and two thirds rated their health as either 'poor' or 'fair'. This compares to 1 in 10 reporting their health as 'poor' and 4 in 10 reporting their health as 'poor' or 'fair' among a comparable group of non-users (figure 25). The figures were similar although slightly improved for alerting device users, with one quarter reporting their health as 'poor' and 6 in 10 reporting their health as 'poor' or 'fair' (figure 26)

## Diagnosed Cardio Vascular Disease

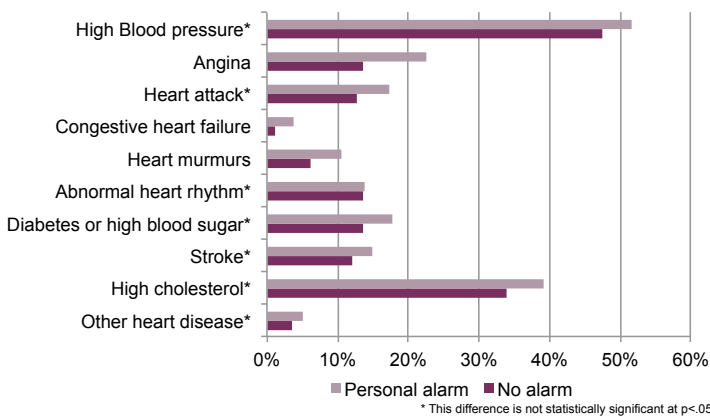


Figure 27: Diagnosed cardio vascular disease: personal alarms

## Diagnosed Chronic illness

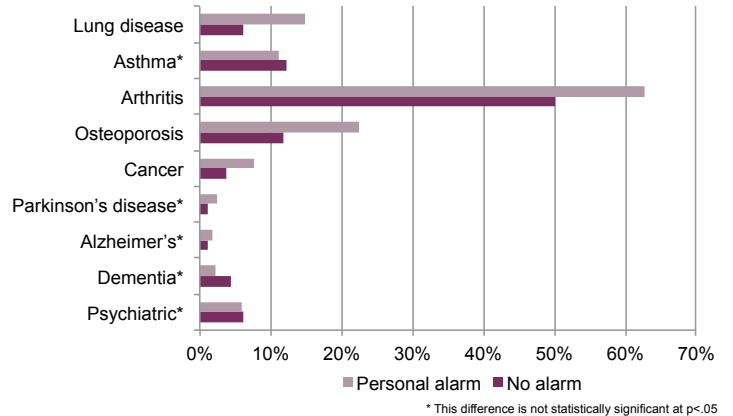
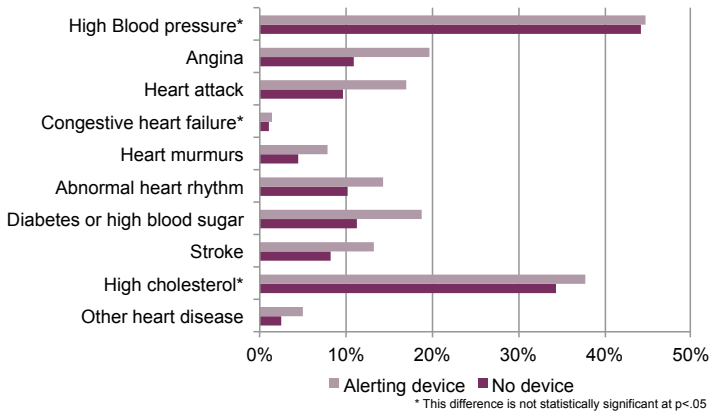


Figure 28: Diagnosed chronic illness: personal alarms

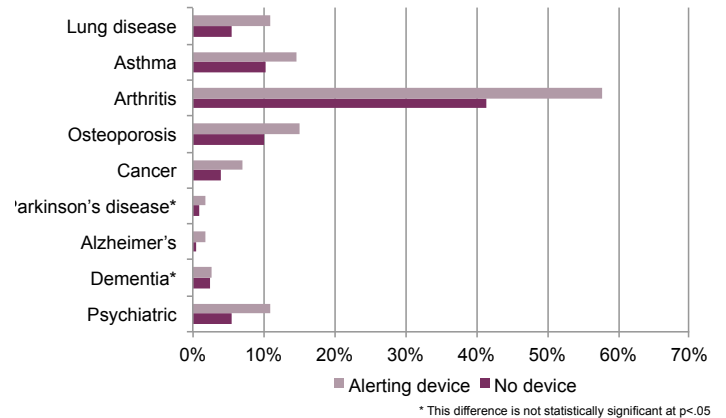
We also explored diagnosed health conditions, comparing the prevalence of coronary vascular heart disease and chronic illness among telecare users and non-users. Overall, the prevalence of disease and chronic illness was similar across telecare users and non-users, however, there were some significant differences. Among personal alarm users, there was greater incidence of angina (23% compared to 14% among non-users), coronary vascular heart disease (3% compared to 1%), heart murmurs (10% compared to 6%), lung disease (15% compared to 6%), osteoporosis (22% compared to 12%) and cancer (7% compared to 4%) (figures 27 and 28).

## Diagnosed Cardio Vascular Disease



**Figure 29: Diagnosed cardio vascular disease: alerting devices**

## Diagnosed Chronic illness

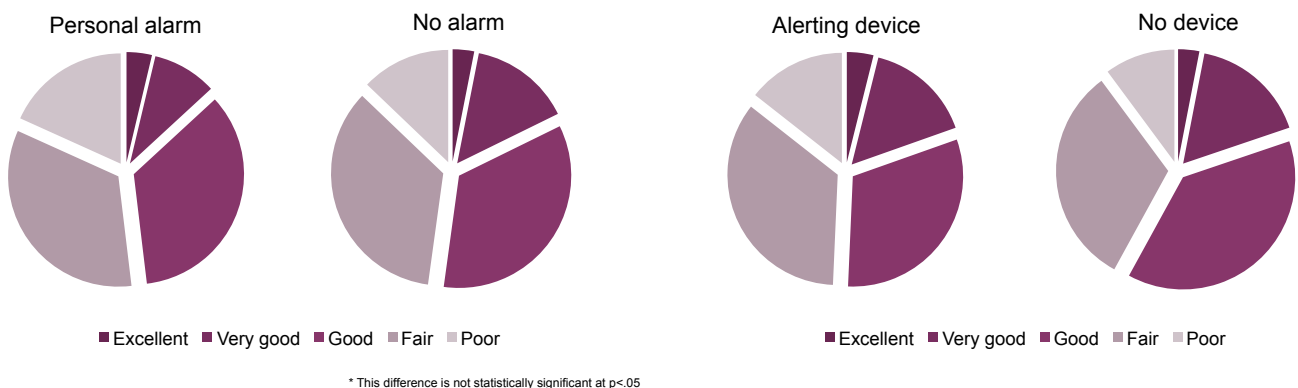


**Figure 30: Diagnosed chronic illness: alerting devices**

Alerting device users also showed a general tendency for poorer health compared to non-users. Alerting device users were more likely to be diagnosed with angina than non-users (20% compared to 11%), heart attack (17% compared to 10%), heart murmurs (8% compared to 4%), diabetes or high blood sugar (19% compared to 11%), lung disease (11% compared to 5%), cancer (7% compared to 4%), Alzheimer's (2% compared to 0%), and psychiatric problems which predominantly consisted of depression and anxiety (11% compared to 5%) (figures 29 and 30).

## 5.2 Cognitive functioning

### Self-rated memory



**Figure 31: Self-rated memory: personal alarms\***

**Figure 32: Self-rated memory: alerting devices**

The final health measures examined the cognitive capability of respondents. This includes a self-assessment of memory and two batteries of tests providing a further (objective) measure of memory, and executive functioning. There was little difference in the self-assessed memory of telecare users and non-users. Overall, around one-sixth of respondents reported having a 'poor' memory and half reported their memory as 'poor' or 'fair'. Alerting device users reported worse memories on average compared with non-users (figures 31 and 32).

# Memory Index

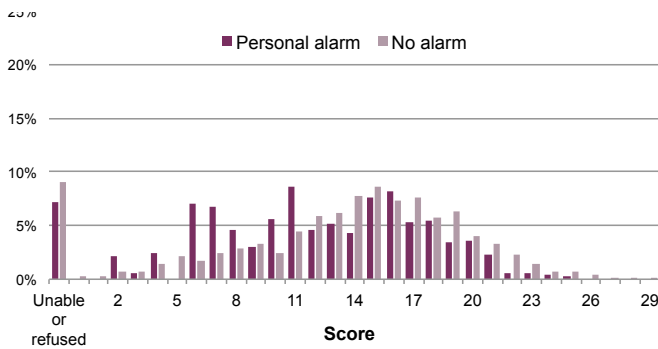


Figure 33: Memory index: personal alarms

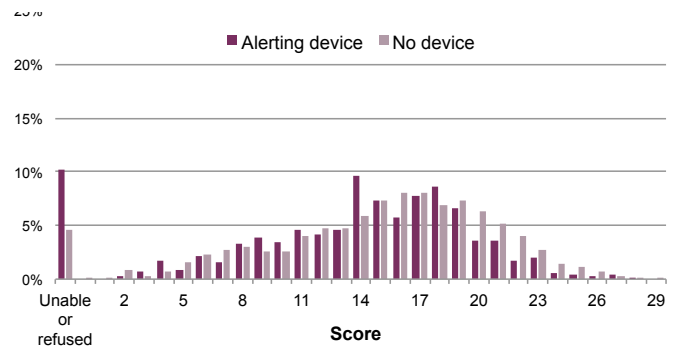


Figure 34: Memory index: alerting devices

# Executive Function

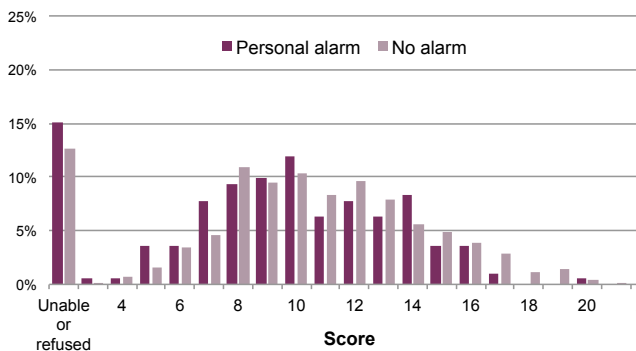


Figure 35: Executive function: personal alarms

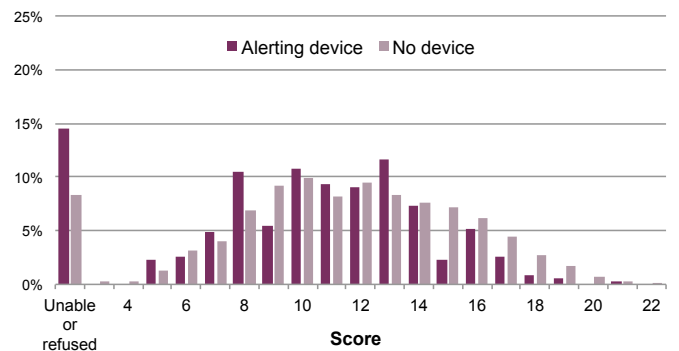


Figure 36: Executive function: alerting devices

Three tests were used to measure memory function, including orientation in time, word recall, and a measure of prospective memory. Scores were then combined to form a memory index ranging from 0 to 30 with a high score reflecting good memory function. The executive functioning index was constructed from four tests covering verbal fluency, attention, visual search and mental speed, and is again measured on a scale from 0 to 23 with a high score reflecting good cognitive function. Telecare users had poorer scores on average on both indices reflecting poorer cognitive functioning. The mean scores for personal alarm users was 12.6 for memory function and 10.4 for executive functioning, compared to 14.5 and 11.1 for non-users. For alerting device users the mean scores were 14.7 on memory functioning, and 11.2 on executive functioning, compared to 15.5 and 11.9 for non-users.<sup>14</sup>

Small sample sizes made the task of identifying statistically significant differences between private and non-privately funded telecare users particularly problematic. Nevertheless there were a number of instances in which differences were statistically significant. Among personal alarm users, those with non-private funding were more likely to report difficulty walking 100 yards (67%), difficulty walking quarter of a mile unaided (94%), problems with balance (86%), and lung disease (22%), compared to those whose alarms were privately funded (the respective figures private funded alarm users are 53%, 88%, 73% and 10%) (results not shown). Non-privately funded users also had poorer memory functioning than private funded users, with a mean score of 11.0 compared to 13.7 on the memory index scale (results not shown). However, private funded alarm users were more likely to report that they were in 'poor' health (39%) compared to 26% of non-privately funded alarm users (results not shown).

<sup>14</sup> The standard deviation was 5.1 for the memory function index and 3.5 for executive functioning. The standard deviation is a standardised measure of the overall distribution of a score and can be used to get a sense of the significance of the magnitude of difference between two mean scores. A difference of one standard deviation or more typically denotes a very significant difference.

### *Differences between private and non-privately funded telecare users*

Interestingly, the relationship between funding source and health was in the other direction for alerting device users. Privately funded users were more likely to report difficulty getting up from a chair after sitting for long periods (66%), getting in or out of bed (23%), using the toilet, including getting up or down (20%), difficulties walking because of lightheaded or dizziness (22%), or because of anxiety or fear (10%) compared to those whose devices were non-privately (the respective figures for non-privately funded alarm users are 52%, 14%, 9%, 11% and 3%) (results not shown).

However, non-privately funded alerting device users had poorer cognitive functioning, although differences were very small. Non-private funded users had a mean memory index score of 14.1 compared to 15.6 for private funded users, and an average executive functioning score of 10.7 compared to 11.7 (results not shown). Non-privately funded alerting device users were also more likely to have asthma (18% compared to 8% of privately funded (results not shown)).

#### **The Health and Disability of Telecare Users: The Numbers**

The ELSA data used in this analysis is representative of the 50+ population in England in 2007-08. Since the sample covers private residential households only, and does not include institutional settings (e.g. hospitals residential care), the base sample is 17,066,773. Around 375,000 people used personal alarms and 715,000 used alerting devices in England in 2007-08, among the 50+ population. Using these figures we are able to estimate that:

Around 150,000 personal alarm users have high cholesterol, and 195,000 have high blood pressure.  
Around 290,000 alerting device users have high cholesterol, and 320,000 have high blood pressure.

# 6. The Care of Telecare Users

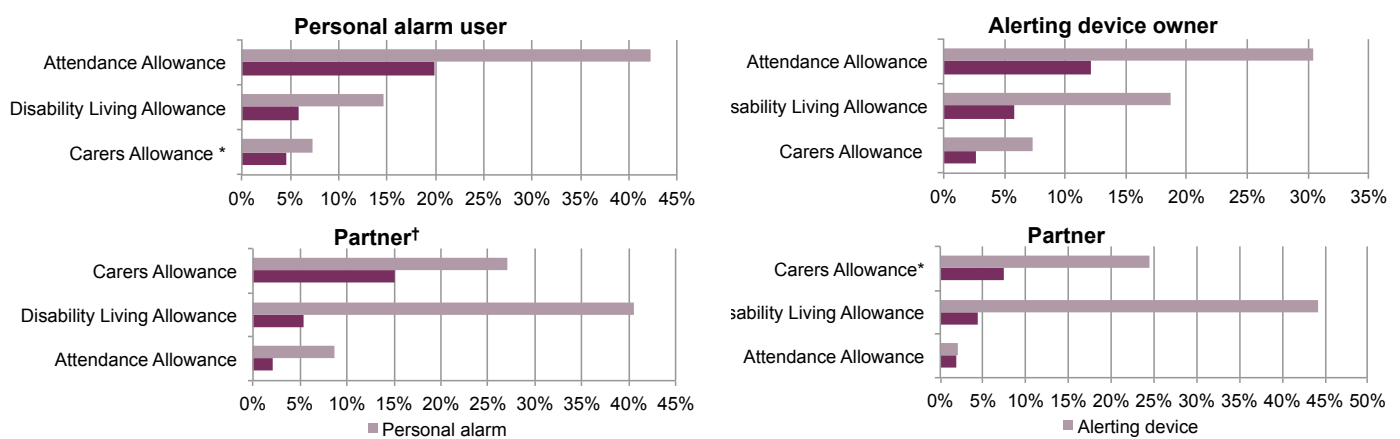
The chapter reviews findings on the receipt of care and support among telecare users.

## 6.1 Disability Benefits

Individuals aged over 50 may be entitled to claim disability benefits. In 2008, these were Disability Living Allowance (DLA) and Attendance Allowance (AA). Personal alarm and alerting device users were more likely to receive DLA and AA compared to non-users.

Around 42% of personal alarm users and 30% of alerting device users received Attendance Allowance (AA), whilst 15% of personal alarm users and 19% of alerting device users received Disability Living Allowance (DLA) (figures 37 and 38).

## Disability benefits currently received



† The sample of personal alarm users living with a partner is extremely small (n = 21) \* This difference is not statistically significant at p < .05

\* This difference is not statistically significant at p < .05

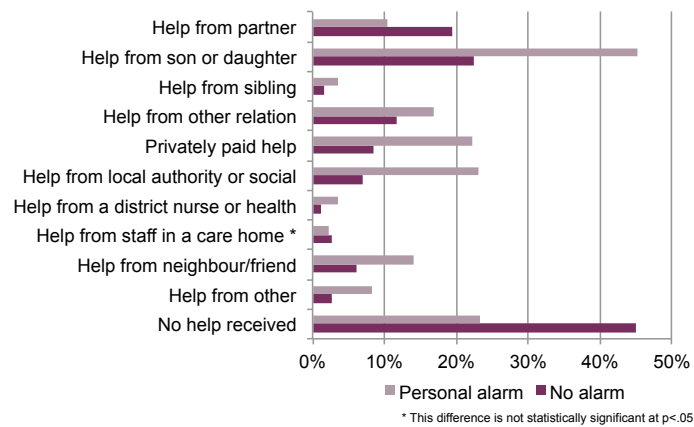
**Figure 37: Disability benefits received: personal alarms**

**Figure 38: Disability benefits received: alerting devices**

## 6.2 Help received

Respondents who reported one or more mobility, activity of daily living or instrumental activity of daily living difficulty, were asked whether they received any help with their difficulty, and if so, who they received this help from. We already note in Chapter 5 that personal alarms users were more likely to report multiple difficulties than non-users. It is therefore not surprising that they are also more likely to report receiving help. The largest single resource for support reported was from a daughter or son. Around 46% of personal alarm users report receiving

## Help received with mobility, ADL or IADL issue

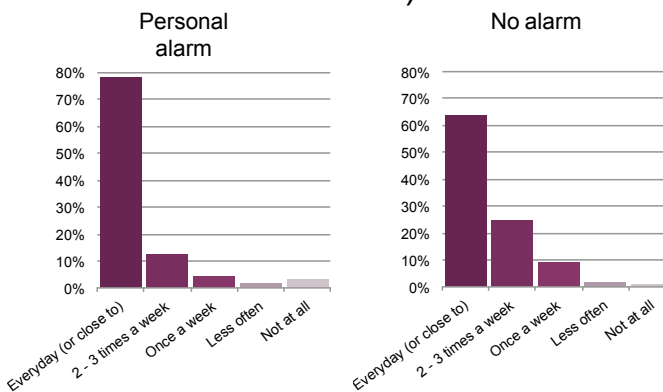


**Figure 39: Source of help received: personal alarms**

support from their children. However, significant numbers – around one-fifth - report receiving support from social services and a similar proportion for private support (figure 39).

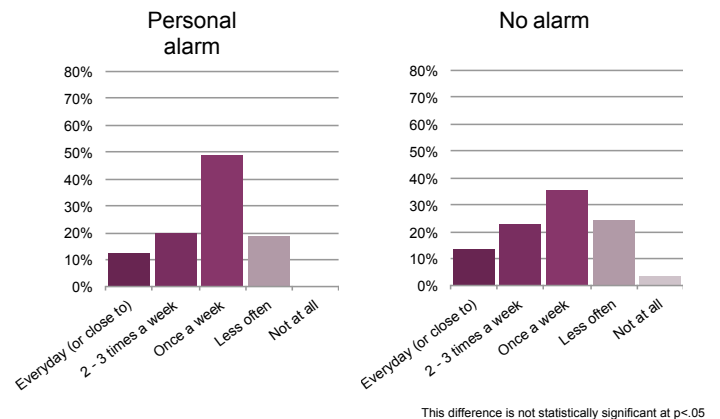
Figures 40 and 41 show the frequency with which those receiving paid for, or social services support, receive this type of care, again comparing those who use personal alarms against non-users. What the figures show is that, when used, social services support is typically received much more frequently than paid for care. The vast majority of recipients of social support receive this type of care on a daily basis, compared to privately paid for care which is used less frequently (more often than not, once a week). Overall, personal alarm users use both types of care more frequently than non-users, although the difference in frequency of private paid care use is not statistically significant.

### How often they received care in last month (local authority or social services)



**Figure 40: Frequency of local authority help: personal alarms**

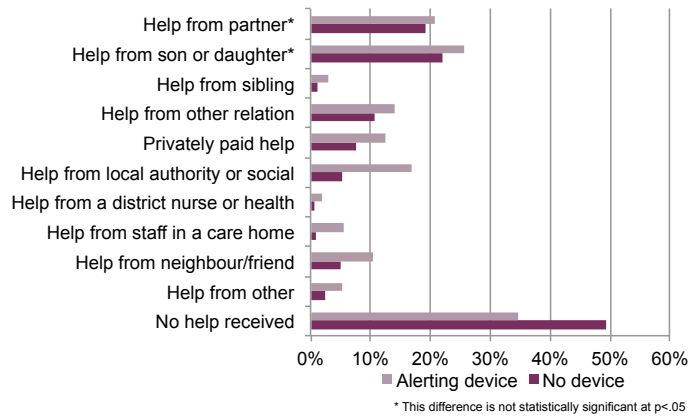
### How often they received care in last month (private)



**Figure 41: Frequency of private help: personal alarms**

Alerting device users are less likely to report receiving support from a son or daughter (26%) and more likely to report receiving support from a partner (21%) than personal alarm users (figure 42). This finding reflects differences in the living arrangements between the two types of device users, with alerting device users more likely to live with a partner (see figure 10).

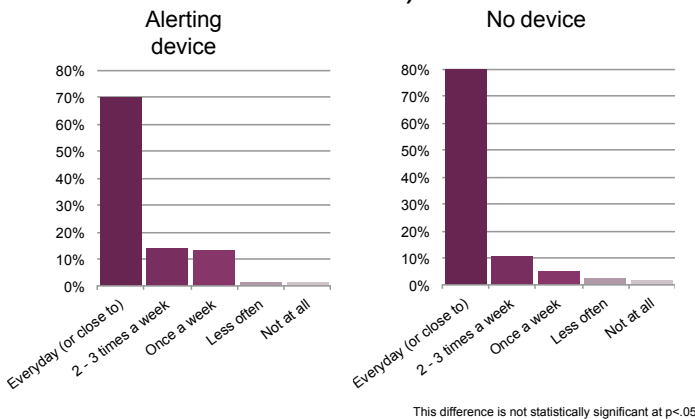
## Help received with mobility, ADL or IADL issue



**Figure 42: Source of help received: alerting devices**

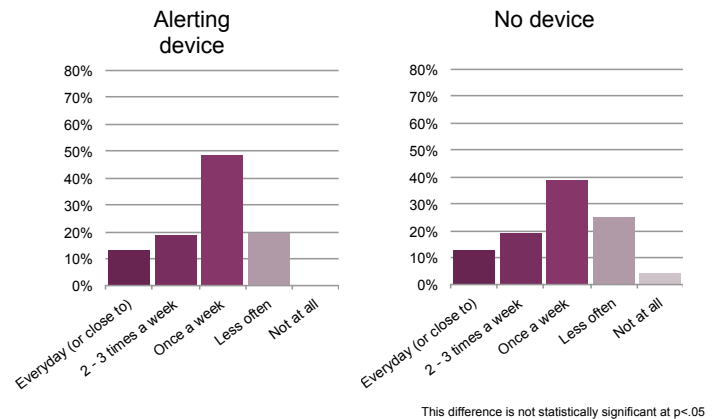
Alerting device users are also less likely to receive social services care (17%) or care they pay for themselves (12%). Again social services care, when used, is typically received more frequently than paid for services (figures 43) and 44. Differences in the frequency of use between alerting device users and non-users is not statistically significant.

### How often they received care in last month (local authority or social services)



**Figure 43: Frequency of local authority help: alerting devices**

### How often they received care in last month (private)



**Figure 44: Frequency of private help: alerting devices**

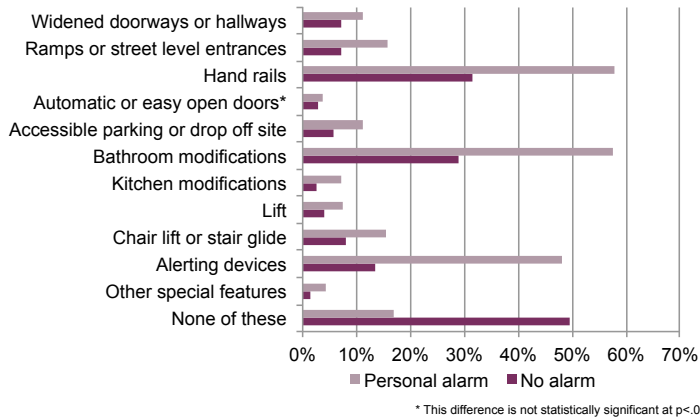
## 6.3 Use of other adaptations and aids

Personal alarm users are also likely to use other aids, particularly those to aid walking. Around 68% use a cane or walking stick, 35% use a zimmer frame or walker, 27% a manual wheelchair, and 7% an electric wheelchair, again reflecting the level of walking difficulty among this group (figure 46). They are also likely to have had adaptations to their property, especially handrails (58%) and bathroom modifications (57%).

Almost half of personal alarm users also report having alerting devices. It is possible that the respondent is reporting the same device twice. As noted in Chapter 2, interviewers are informed that personal alarms can also be those fixed to the home, although it is not clear whether this point is conveyed to the respondent. But it is also very possible that respondents use both fixed and mobile alerting devices.

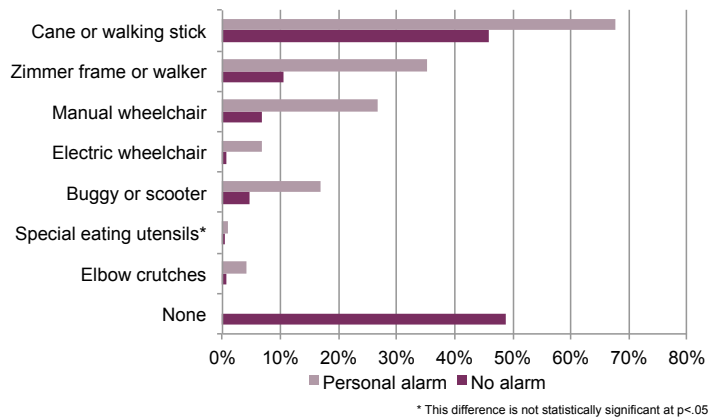
Similarly there is a high level of device use to aid walking among alerting device users, although the respective figures are lower than they are for personal alarm users, supporting a view that alerting device use captures a

## Other adaptations to the property



**Figure 45: Adaptations to the property: personal alarms**

## Use of other aids

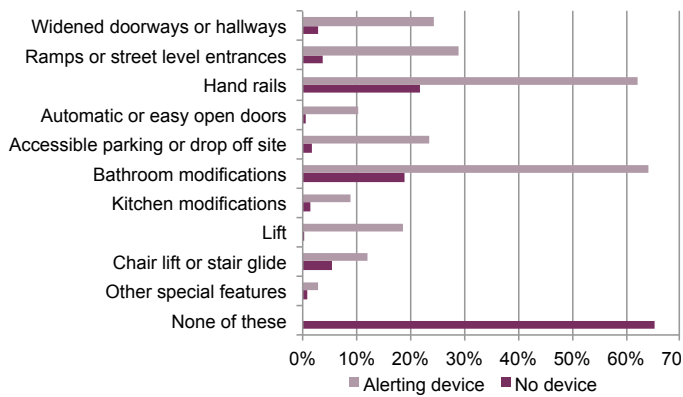


**Figure 46: Use of other aids: personal alarms**

broader range of telecare use than personal alarms. Around 57% use a cane or walking stick, 22% use a zimmer frame or walker, 18% a manual wheelchair and 5% an electric wheelchair (figure 48). Again, there is evidence of an overlap in telecare use between personal alarm and alerting device users. Around 28% of alerting device users also report using a personal alarm.

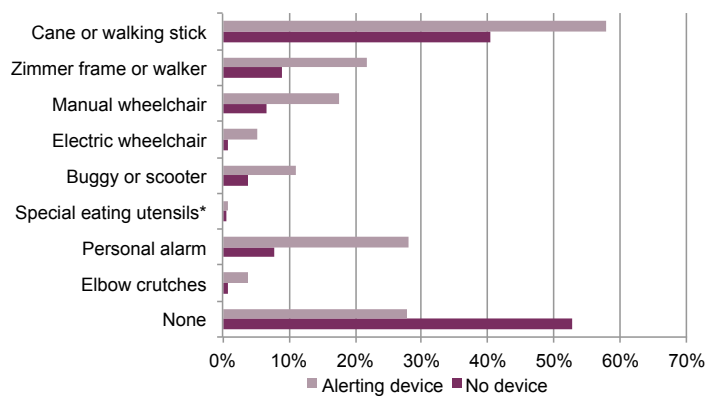
Individuals who have alerting devices fitted to their homes are also fairly likely to have other adaptations. Again, the most prevalent adaptations are handrails (62%) and bathroom adaptations (64%). There was also a greater prevalence of housing adaptations overall compared to the prevalence of housing adaptations among personal alarm users.

## Other adaptations to the property



**Figure 47: Other adaptations to the property: alerting devices**

## Use of other aids



**Figure 48: Use of other aids: alerting devices**

### **The Care of Telecare Users: The Numbers**

The ELSA data used in this analysis is representative of the 50+ population in England in 2007-08. Since the sample covers private residential households only, and does not include institutional settings (e.g. hospitals residential care), the base sample is 17,066,773. Around 375,000 people used personal alarms and 715,000 used alerting devices in England in 2007-08, among the 50+ population. Using these figures we are able to estimate that:

Around 55,000 personal alarm users receive Disability Living Allowance, and 160,000 receive Attendance Allowance.

Around 135,000 alerting devices users receive Disability Living Allowance and 218,000 receive Attendance Allowance.

Among alerting devices users, 250,000 receive no other help, 120,000 receive help from their local authority, 90,000 purchase care privately, 185,000 receive help from a son or daughter, and 150,000 receive help from a partner.

Among personal alarm users, 90,000 report receiving no other help, 90,000 report help from a local authority or social services, 85,000 purchase care privately, 170,000 report help from a son or daughter and 40,000 report help from a partner.

# 7. Potential Telecare Users

**In addition to exploring the lives of current telecare users, an important objective of ‘Who Uses Telecare?’ was to identify and describe potential telecare users among the population of non-users.**

Chapter 2 provided a detailed description of the methodology deployed for identifying potential users on the basis of current users, which essentially comprised using information on the physical functioning of current users to predict those most likely to qualify and perhaps benefit from the use of telecare. Whilst the approach is not an exact science, involving as it does a significant degree of subjectivity, the approach is underpinned by the expertise of a practitioner working in the field, and was also tested empirically against the data.

Because of the low prevalence of telecare use among those aged 50-59, the analysis for Stage Two was restricted to individuals aged over 60.<sup>15</sup>

## 7.1 Prevalence of Potential Telecare Users

On the basis of our analysis, we estimate that 38.2% of individuals aged 60+ in England may be potential telecare users.<sup>16</sup>

### Prevalence of potential Telecare users among older population (aged 60+)

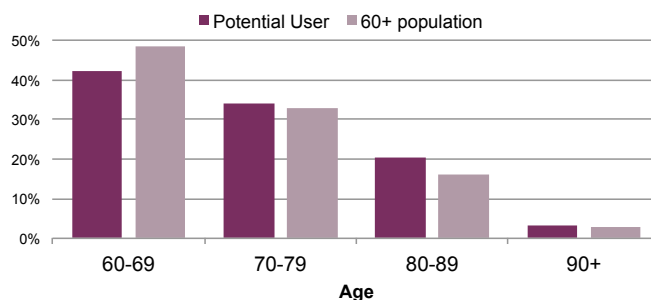
	Personal alarm
<b>Overall prevalence</b>	<b>38.2 %</b>
Currently receives informal care	44.4 % (18.0 %)
Currently receives social services or Local Authority care	2.7 % (1.0 %)
Currently receives paid for care services	5.4 % (2.1 %)
Currently receives 'other types' of care	2.3 % (1.0 %)
Currently receives no care	44.5 % (18.0%)
Not asked about care use	7.7 % (2.7 %)

**Table 6: Prevalence of potential telecare users among older population (60+)**

<sup>15</sup> Overall weighted sample sizes for this section are Potential telecare users: 2397 and 60+ population in England: 6275

<sup>16</sup> The figures prior to the brackets present results as a percentage of the total potential users. Figures in brackets present the results a percentage of the total population of individuals aged 60 and over.

# Age group



**Figure 49: Age of potential telecare users**

Among potential telecare users, around 45% receive no care, a further 45% per cent receive informal care, around 5% pay for care privately, 3% receive care (funded) from local authorities, and 2% receive care from other sources.

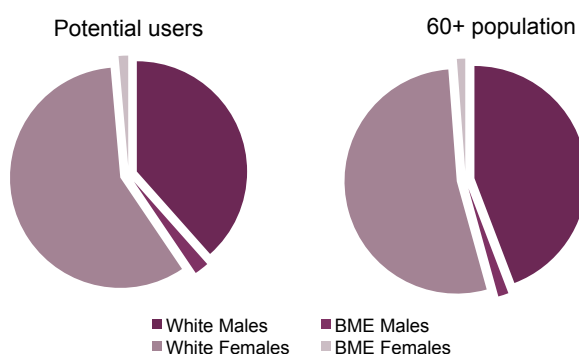
## 7.2 Demographic Profile

The age demographics of potential users are very similar to those of the 60 plus population in general, although they are a little older on average overall.

Interestingly, whereas over half of current personal alarm and alerting device users are aged 70-89, the largest age group of potential users is aged 60-69, at over 40%.

In Chapter 3, we showed that white females account for at least two-thirds of current personal alarm and alerting device users. However, we find that a much greater proportion of potential users are white males (figure 50).

# Gender and ethnicity



**Figure 50: Gender and ethnicity of potential telecare users**

Compared to the general population, potential telecare user have on average a lower income and lower levels of non-pension wealth (tables 7 and 8). This may reflect higher rates of disability and impairment among poorer households.

## Weekly equivalised income

	Potential user	60+ population
<b>Mean amount</b>	<b>£ 300.4</b>	<b>£ 318.5</b>
Standard error	£ 9.4	£ 5.8
95 <sup>th</sup> percentile	£ 638.6	£ 703.0
75 <sup>th</sup> percentile	£ 319.5	£ 355.3
<b>50<sup>th</sup> percentile (median)</b>	<b>£ 223.0</b>	<b>£ 235.4</b>
25 <sup>th</sup> percentile	£ 157.0	£ 161.4

**Table 7: Weekly equivalised income: potential telecare users**

## Total (non-pension) wealth

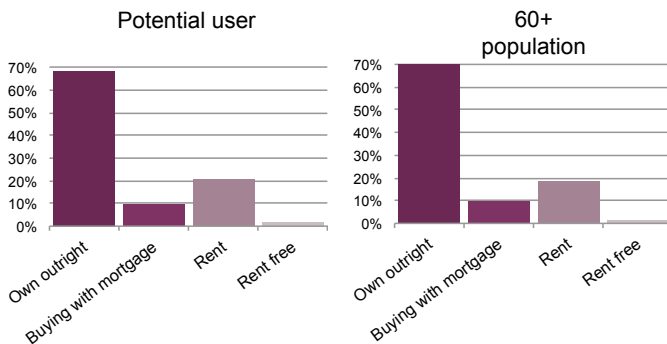
	Potential user	60+ population
<b>Mean amount</b>	<b>£ 249,699</b>	<b>£ 302,021</b>
Standard error	£ 8,096	£ 9,296
95 <sup>th</sup> percentile	£ 721,977	£ 850,941
75 <sup>th</sup> percentile	£ 310,798	£ 351,405
<b>50<sup>th</sup> percentile (median)</b>	<b>£ 181,000</b>	<b>£ 200,500</b>
25 <sup>th</sup> percentile	£ 57,771	£ 88,000

**Table 8: Total (non-pension) wealth: potential telecare users**

Nevertheless, it is striking that potential telecare users have a significantly higher income and higher levels of non-pension wealth than current users of personal alarms and alerting devices as presented in Chapter 3.

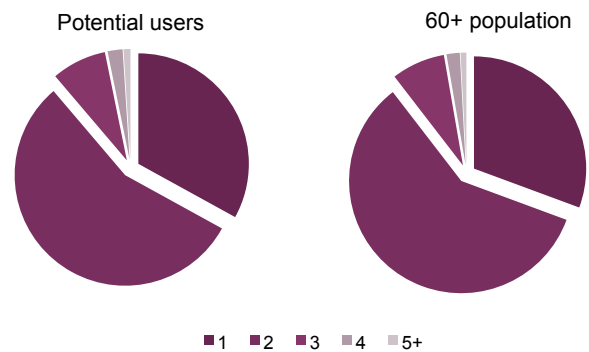
Around 70% of potential telecare users own their own home, which is a similar proportion to the general population (figure 51). The number of co-habitants of potential telecare users is also similar to that of the general population – over half live with one other person. However, this markedly contrasts with current device users, among whom over half live alone.

## Tenure



**Figure 51: Tenure: potential telecare users**

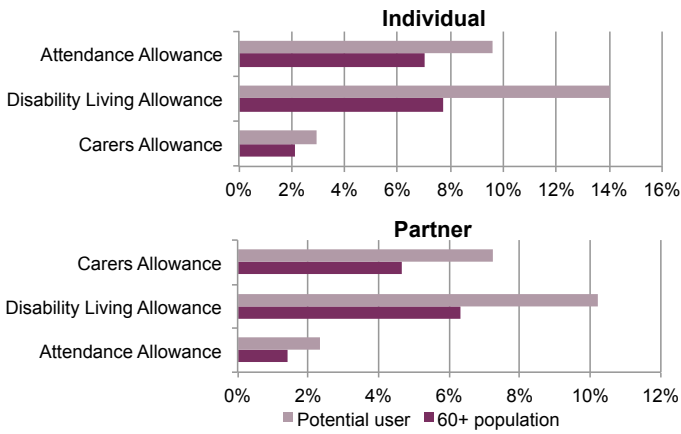
## Total number of people in the household



**Figure 52: Total number in household: potential telecare users**

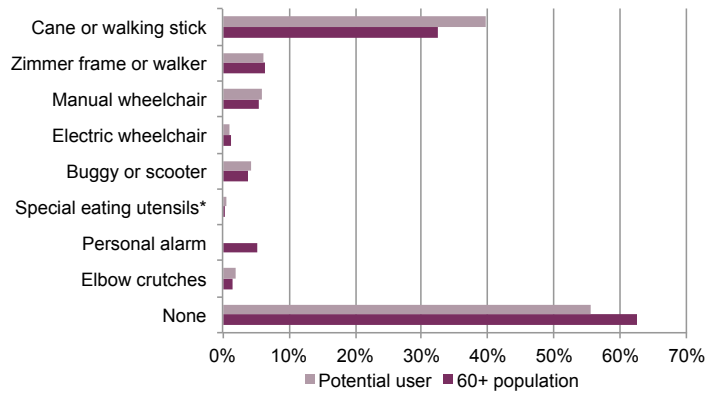
Relatively few potential telecare users received either DLA or AA in 2008 (figure 53). In large part, this is likely to reflect the fact that in defining potential users, the analysis included individuals with lower levels of impairment as would normally be required to claim disability benefits. This is borne out by the fact that the number of potential users identified by the analysis is significantly higher than the number of disability benefit recipients in the 60+ population.

## Disability benefits currently received



**Figure 53: Disability benefits received: potential telecare users**

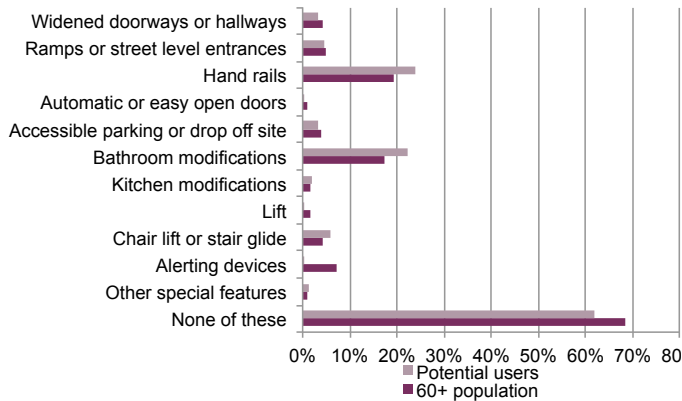
## Use of other aids



**Figure 54: Use of other aids: potential telecare users**

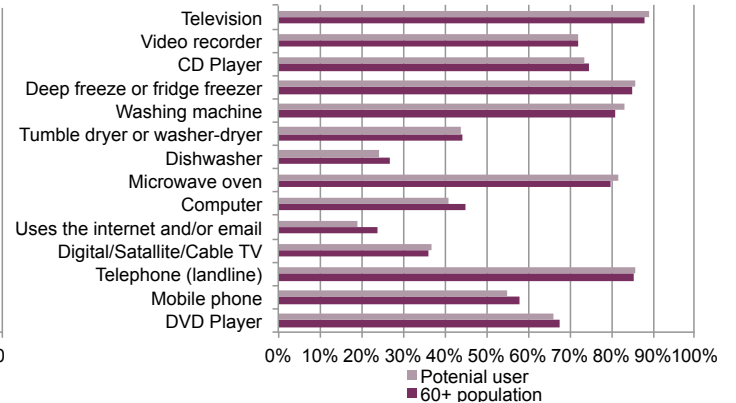
Among potential telecare users, the majority do not use any type of aid – such as a cane or wheelchair. Furthermore, very few have adaptations to the property to enable them independently. As with the general population, the most common adaptations are handrails and modifications to the bathroom (figure 55).

## Other adaptations to the property



**Figure 55: Adaptations to the property: potential telecare users**

## Owns the following devices



**Figure 56: Ownership of household devices: potential telecare users**

In relation to consumer durables, there is little difference between potential telecare users, and the general population aged over 60 in England. However, there are notable differences to current telecare users, particularly in relation to use of communications technology as shown in Chapter 4. Over 80% of potential telecare users have a landline telephone, over half have a mobile phone and over 15% use the Internet.

### **Potential Telecare Users: The Numbers**

The ELSA data used in this analysis is representative of the 60+ population in England in 2007-08. Since the sample covers private residential households only, and does not include institutional settings (e.g. hospitals residential care), the base sample is 10,922,918. Having identified 38.2% of the over-60 sample in ELSA as potential users, this suggests there are around 4,175,000 million potential telecare users. Within this group:

- Around 1,855,000 receive informal care.
- Around 115,000 receive support from their council
- Around 225,000 pay for care privately.
- Around 1,860,000 receive no care and support.
- Around 2,860,000 potential users own their own home.
- Around 2,460,000 potential telecare users live alone.
- Around 585,000 receive Disability Living Allowance.
- Around 400,000 receive Attendance Allowance.
- Around 2,295,000 use a mobile phone.
- Around 795,000 use the Internet/email.



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