Investigating the Longer Term Impact of Home Care Re-ablement Services

The Short-term Outcomes and Costs of Home Care Re-ablement Services

Interim Report

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Chapter 1 Introduction

1.1 Background

1.1.1 What is home care re-ablement?

English local authorities with responsibility for adult services are increasingly developing short-term, specialist home care-based re-ablement services. Re-ablement can be described as an ‘approach’ or a ‘philosophy’ within home care services – one which aims to help people ‘do things for themselves’, rather than ‘having things done for them’. Home care re-ablement services provide personal care, help with activities of daily living and other practical tasks for a time-limited period, in such a way as to enable users to develop both the confidence and practical skills to carry out these activities themselves.

Home care re-ablement services can take different organisational forms. In some localities, home care re-ablement services are funded and operated jointly with NHS partners. In many local authorities, adult services departments have taken a lead themselves, often as part of the reconfiguration of the authority’s home care services. Here, in-house home care staff receive training in re-ablement approaches and teams are often strengthened by the appointment of occupational therapists (OTs), OT aides and other specialist staff. In any case, easy access to equipment by re-ablement team members is important.

Home care re-ablement services fall into two broad groups. In ‘discharge’ services, re-ablement works predominantly or exclusively with people who have been discharged from hospital. Discharge services can be selective, accepting only people certain to benefit from a re-ablement approach and, as with intermediate care, are likely to be free of charge. In other localities, home care re-ablement acts as an ‘intake’ service for a wide range of users who meet local Fair Access to Care (FACS) eligibility criteria and are referred for home care services. Often, only people thought unlikely to benefit, such as those with end-stage terminal illness or advanced dementia, will be screened out from an ‘intake’ service.

Home care re-ablement services are normally offered for up to six weeks, with some flexibility to continue for longer if the user would benefit from this or if appropriate longer-term support services are not immediately available. Re-assessments and referrals for on-going home care and other services are made at the end of the period of re-ablement. Unlike intermediate care services, which were developed in the context of policy concerns about inappropriate hospital bed use by older people, re-ablement services are usually available to adults of all ages.

1.2 Policy background to the study

The need for greater investment in preventive and rehabilitation services was recognised a decade ago (Kings Fund, 1999). At that time there were relatively few alternatives to extended hospital stays or services that could avert admission to institutional care. The Audit Commission (1997) described this as a ‘vicious circle’ of spiralling costs, inefficient use of scarce resources and a failure to enable older people to live as they preferred – independently in the community.

The NHS Plan (Secretary of State for Health, 2000) announced significant investment in new intermediate care services. Intermediate care aimed to reduce the length of hospital stays by offering services to aid recovery outside acute settings; and/or provided a ‘rapid response’ in emergency situations to avert the need for admission to hospital or residential care. A wide variety of intermediate care services were established, based variously in acute, community and day hospitals; community-based teams working in people’s own homes; and residential services in purpose-built units, sheltered housing or care homes. Some intermediate care services are entirely hospital-based; others are funded and delivered jointly by local NHS and social services organisations.

More recently, councils with adult social care responsibilities have begun to develop home care re-ablement services. A Care Services Efficiency Delivery (CSED) questionnaire distributed to councils in England during autumn 2006 found that 24 per cent already had a home care re-ablement service; 16 per cent had a limited service that they were planning to expand; and 26 per cent were planning to establish home care re-ablement services (CSED, 2007). An updating survey published in 2008 found that 106 councils had a re-ablement service in place, were seeking to expand an existing service or were in the process of establishing a service. About a third of councils supplying the necessary information reported that they charged for re-ablement services while two-thirds did not and did not intend to (CSED, 2008).

Local authority home care re-ablement services have quickly come to occupy an important place in policies aimed at enabling older people, in particular, to remain living independently in their own homes for as long as possible. They are a cornerstone of preventive service initiatives and as such have the potential to be cost-effective, in that the costs of the service are outweighed by reductions in the use of more intensive services over time. The policy commitment to home care re-ablement services was restated in the recent Green Paper on future options for adult social care:

> **We think that people who are leaving hospital and need care and support for the first time should have the right to the re-ablement help they will benefit from at home, for example for six weeks.** This extra support will help people get back to their normal lives. (original emphasis)
>
> (Secretary of State for Health, 2009: 51)

1.3 Research background

The wide diversity of intermediate care services - their settings, the interventions they offer, the range of routes by which users access them and the 'destinations' to which users move on discharge - has made systematic evaluation very difficult (Barton *et al.*, 2005). High level performance indicators have shown few changes in the use of health and social care services, although they do suggest shifts in the 'routes' followed by users through a spectrum of health and social care services (Godfrey *et al*., 2005). Nevertheless qualitative evidence from service users suggests that intermediate care can make a significant difference to their lives (Godfrey *et al*., 2005).

Home care re-ablement services are likely to be characterised by less diversity. They are commonly based within local authority adult social care services, employing retrained, in-house home care staff, and offering up to six weeks intervention. The main difference between re-ablement services is likely to be whether they are restricted to people newly discharged from hospital (or intermediate care) or whether they accept everyone who has been accepted as eligible for local authority-funded home care services.

A key challenge in investigating the effectiveness and cost-effectiveness of home care re-ablement services to date has been the technical ability to link routine data on re-ablement service use with data on subsequent social care and other service use. Nevertheless, two preliminary studies have begun to develop an evidence-base on the impact of home care re-ablement in England.

An early study investigated the impact of Leicestershire's pilot home care re-ablement service (Kent *et al*., 2000). When the pilot started it was highly selective; it was later extended to become an 'intake' service for everyone assessed as needing home care. Users' subsequent use of home care services (as measured at the time of first review) was compared with that of a matched group of service users from another part of the county which at the time did not have a re-ablement service. Initially, people referred to the home care re-ablement service (both selective and 'intake' versions) had larger packages of care, as measured by weekly hours of home case, than those in the comparison group. However, when service use at the time of first review was compared, the re-ablement group was far more likely to have discontinued home care service use than the comparison group. The results were particularly dramatic for users of the selective service. Among those re-ablement service users who did continue to use home care services, their level of services was more likely to have decreased and less likely to have increased at the time of the first review than those who had not had re-ablement.

Although showing dramatic reductions in the use of home care services, the Leicestershire study was only able to demonstrate the impact of home care re-ablement at the time of first review, around three months after re-ablement. A further study examined the longer-term impact of home care re-ablement (Newbronner *et al*., 2007). This study used data from two local authority ‘discharge support’ re-ablement services and two further ‘intake’ re-ablement services and examined the use of social care services at 3, 6, 12, 18 and 24 months after discharge from re-ablement. In three of the four sites, between a third and a half of re-ablement service users used no other home care services, either before or up to 24 months after re-ablement. Among some of those who did use standard home care services following an episode of re-ablement, starting to use these services appeared to be delayed for a year or more; moreover in two of the four sites the percentages using less home care, compared with their discharge from re-ablement, actually increased over time.

This latter study was small and exploratory. It lacked robust baseline data on re-ablement service users and, crucially, it also lacked a comparison group of people who received only standard home care services. It was therefore not possible to conclude with certainty that any reduction in the use of home care services, in either the shorter or longer terms, was due to the impact of re-ablement; such reductions in service use might have occurred anyway as part of the normal fluctuations in health and support needs of older and disabled people.

A review of international evidence on the effectiveness of re-ablement approaches also suggests that positive impacts on users’ functional status and subsequent use of services are likely (Ryburn *et al*., 2009). The provision of aids, equipment and home adaptations appears particularly likely to improve functional status and result in longer-term cost savings. However, the reviewers point to the limitations of the evidence base, as there have been relatively few evaluations of re-ablement services and those that have been undertaken have been limited by small sample sizes. Questions remain about the most effective types of programmes; about which groups are likely to benefit most; and about the most effective timing and duration of re-ablement interventions. Moreover, ‘research looking at the longer term outcomes (i.e. post one-year duration) from restorative programmes has been limited, so the longer term benefits have yet to be substantiated’ (Ryburn *et al*., 2009: 232). The overall home care re-ablement evaluation, to which this report contributes, aims to fill the evidence gap.

1.4 Overarching aims of the study

The overall aims of the study, of which this interim report is part, are:

- To provide robust research evidence on the immediate and longer-term benefits of home care reablement, including:
  - User-level benefits (e.g. improved independence, quality of life, mental well-being).
  - Service-level benefits (e.g. reduced demand for services, use of less expensive services).
- To identify the factors that affect the level and duration of benefits for service users of a period of reablement (e.g. features of the reablement service; type and level of services used after reablement).
- To identify any impact on and savings in the use of social care and other services, that can be set against the costs of reablement services.
- To describe the content and costs of home care reablement services.

The overall design of the study, details of its implementation and changes that were made in the course of the data collection period are contained in Appendix A. This report concentrates on one aspect of the evaluation, namely the immediate benefits of home care re-ablement. Specifically, its aims are:

1. To provide robust research evidence on the immediate benefits of home care re-ablement, in terms of improved independence, quality of life and perceived health.
2. To describe the costs of home care re-ablement services.
3. To explore the characteristics of re-ablement service users and of re-ablement service interventions themselves that are associated with service user well-being, quality of life and social care outcomes.

1.5 Structure of the report

Chapter 2 describes the design and methods used for this interim report. Chapter 3 outlines the main interim findings while Chapter 4 discusses the implications. Appendix A reports the overall design for the study, and describes the selection of sites and the recruitment process, followed by a description of the quantitative outcome measures and the statistical analysis relevant to this interim report. Appendix B presents profiles of the five sites offering re-ablement support. Appendices C and D give detailed descriptions of the calculation of re-ablement service costs in each site.

Chapter 2 Methods

2.1 Study design

Although a randomised design provides the most robust evidence on the impact of an intervention, this was not feasible as in any given locality a local authority would provide **only** home care re-ablement services or **only** standard home care services. Therefore a multi-method comparative study was designed. Further details of the overall study design are included in Appendix A and a profile of the re-ablement sites can be found in Appendix B.

The following is a summary of the data collection processes relevant for this interim report:

- All new referrals to home care re-ablement services over a given period were recruited from five different local authorities that offered this service; all new referrals to standard home care services were recruited from five other local authorities.
- Baseline data were collected on the functional ability and quality of life from all participants on recruitment to the study (pre-intervention, T1).
- The same measures of functional ability and quality of life were administered to participants in the re-ablement group on discharge from re-ablement services (post-intervention T1+R).
- Local authorities were asked to provide information about the services clients received during their re-ablement period.
- Local authorities were asked to provide information on the costs attributed to the re-ablement service.

During the first 18 months of the study, a number of changes had to be made, including: changes in the numbers of sites involved; changes in the number of outcome measures included in the data collection instruments; and a reduction in the follow-up period between pre- and post-intervention. These changes, and the reasons for them, are detailed in Appendix A.

2.2 Collecting cost information for sites

For each site participating in the study, we have endeavoured to provide a bottom-up costing. This is an approach that identifies the different resources tied up in the delivery of the service and assigns a value for each of these resources. The sum of these values is the total cost. Unit costs are then calculated by linking these costs to different units of activity.

To facilitate data collection, a short questionnaire was devised and sent to the appropriate contacts in each site. Contacts were asked to provide the latest information available. Costs given for the year 2007/08 were uprated to 2008/09 using the standard Personal Social Services inflators. Detailed information about the information that was requested can be found in Appendix C.

Details of annual caseload were also collected so that the average annual cost per service user (average cost) could be calculated by dividing the total cost by the annual number of clients who used the service. The cost per hour and the cost per hour of service user contact were calculated by dividing the total cost by the total number of hours worked by care staff and the number of hours care staff spent with service users respectively.

2.3 Data on use of social care services

At the beginning of each month, a list of the participant identification numbers of all completed T1+R questionnaires received during the previous month was compiled. Each re-ablement site was asked to send details of all re-ablement and any other standard social care services received during the re-ablement period by each participant. Sites were asked to provide a description and the frequency of each service received (for example the hours of re-ablement home care received during the re-ablement period). They were also asked for the costs of the services used, if available. Information about collecting data on use of social care services for the comparison group can be found in Appendix A.7.

2.4 Quantitative data collection

Baseline (T1) interviews were conducted with both re-ablement and comparison group service users asking a range of questions relating to their experiences of services and measures of social care outcomes. Post-intervention interviews (T1+R) were conducted with people in the re-ablement group on discharge from re-ablement. Administrative information (client group, FACS criteria) was collected together with basic demographic information (ethnicity, age and gender), and information about current circumstances (household composition, employment status, activities of daily living, tenure, presence of carer). Outcome measures covered self-perceived health and quality of life, health-related quality of life and social care outcomes. A detailed description of the outcome measures that were used can be found in Appendix A.6.

The majority of baseline (T1) and post-intervention (T1+R) interviews were conducted face-to-face with a local authority representative. Of the 877 completed baseline interviews, 861 (98 per cent) were conducted face-to-face with the remaining 16 conducted by telephone. Of the 444 completed interviews carried out after the service user was discharged from the re-ablement service, 99 per cent (n=439) were conducted face-to-face, with the remaining five conducted by telephone. Seventy-one per cent (555) of service users completed the baseline interview independently; the remainder were helped by a carer or by someone else. Among the people in the re-ablement group, 73 per cent (n=402) completed the baseline questionnaire independently compared with 66 per cent (n=153) of those in the comparison group. The difference did not reach statistical significance.

2.5 Statistical analyses

Univariate analysis relied on paired t-tests, chi-squared tests and binomial tests, while the multivariate analyses relied on xtreg estimator in Stata 10. Further details of the statistical analysis can be found in Appendix A.8. In summary, initially the analysis explored whether there were significant differences between the re-ablement and comparison group in terms of demographic characteristics. The analyses went on to explore the relationship between service users' characteristics and outcome responses pre- and post-intervention for the re-ablement group. Furthermore, among the re-ablement group, differences in outcome responses between pre (T1) and post (T1+R) intervention were also explored.

Taking advantage of the panel nature of the data, we performed multivariate regression analyses employing both a fixed and random-effects model to explore the characteristics of re-ablement service users and of re-ablement service interventions themselves that were associated with service user well-being, quality of life and social care outcomes. Following the estimation procedures adopted by Netten *et al.* (2007) a second random effects model was constructed with local authority dummy variables to explore the impact of area on outcomes. The list of all predictors that were included in each model can be found in Table A.3 in Appendix A.9. The Hausman specification test was carried out on all models to evaluate whether each model corresponded to the data sufficiently (Hausman, 1978).

Chapter 3 Results

This chapter contains the following sections:

3.1 Sample comparisons in both the re-ablement and comparison group to ascertain whether there are significant differences between the two groups at baseline (T1).

3.2 Description of the content of re-ablement services.

3.3 Description of the costs of re-ablement services.

3.4 Explorations of the impact of re-ablement on dependency levels.

3.5 Explorations of the predictors of outcomes.

At this interim reporting stage, we need to highlight a number of caveats that should be borne in mind when interpreting the following results. These may be summarised as follows:

a) Only a sub-set of the full sample for which we have both baseline and follow-up data were available for analysis at the time of this report.

b) The analyses are based on short-term changes in outcomes for the re-ablement group only, thus we cannot conclude from the results whether any changes were due to receiving the intervention. At this stage we do not know whether people receiving usual care might also have improved. Further analyses in the final report will attempt to answer this question by comparing longer-term changes in outcomes in both the re-ablement and comparison groups.

c) It is not possible at this stage to indicate whether re-ablement services that enhance specific activities of daily living would likely generate improvements in outcomes.

d) Analysis on the cost of re-ablement services was not carried out on all the re-ablement sites due to problems gathering the information from local authorities within the timescale for the report.

e) The study was designed to focus solely on older people but, due to difficulties with recruitment, drew on a wider range of service users. The relatively small number of participants in these other user groups has meant it was not possible to undertake analyses by user group.

f) As this study is not a randomised controlled trial, selection bias will inevitably have taken place at recruitment, meaning that the type of service user recruited may vary between sites. This potential bias will have had an impact on the findings and should be acknowledged when interpreting the results.

3.1 Sample comparisons between the re-ablement and comparison group

3.1.1 The sample and primary user groups

At the time of analysis, 248 people in the comparison group had completed the baseline outcome questionnaire and 629 in the re-ablement group (T1). Of the latter, 444 had completed a post-intervention questionnaire on discharge from re-ablement (T1+R), meaning that data were available to compare pre- and post-re-ablement levels of dependency and outcomes. Table 3.1 gives the overall sample size and primary user groups. Information about the user group of each participant is still being collected from local authorities and therefore the analysis has not been carried out on the full sample.

Table 3.1 The sample size and primary user groups

	Re-ablement group		*Comparison group*	
	%	(n)	%	(n)
Overall sample	629		248	
User Group				
Older person	92	(321)	10	(76)
Physical disability	7	(25)	0	
Mental health	1	(2)	0	

3.1.2 Demographics and household characteristics

The mean ages in the re-ablement and comparison group respectively were 81 (range 30 to 102 years) and 80 years (range 24 to 102 years). Table 3.2 compares demographic characteristics and household composition in the re-ablement and comparison groups. The differences between service users in the re-ablement and those in the comparison group did not reach statistical significance.

Table 3.2 Demographics and household composition

	Re-ablement group		*Comparison group*	
	%	(n)	%	(n)
65 years of age or over	94	(583)	90	(223)
Female service user	71	(439)	67	(166)
BME service user	7	(40)	4	(10)
Widowed	53	(324)	54	(134)
Married/cohabiting	26	(155)	25	(63)
Retired	97	(601)	92	(227)
Lives alone	68	(427)	62	(154)
Service user living in privately owned household	60	(341)	53	(130)

3.1.3 Level of need

Table 3.3 compares levels of need between the re-ablement and comparison groups. Need (that is, how dependent participants are on support) has been measured in three ways: local authority Fair Access to Care Services (FACS) eligibility criteria thresholds; participants' ability to undertake certain activities of daily living (ADLs); and participants' reliance on informal carers (living either within the same household or elsewhere).

There are four bands to the Fair Access to Care Services (FACS) eligibility criteria for social services; critical,[1] substantial,[2] moderate[3] and low.[4] Table 3.3 shows that service users in the comparison group were more likely to have been classified as having substantial levels of need (63 per cent; n=138), with those in the re-ablement group being more likely to be classified as having moderate levels of need (48 per cent; n=148; $p < 0.001$). This result indicates that people in the comparison group were more dependent than those in the re-ablement group at baseline (T1). However, it should be treated with caution, as 49 per cent (n=310) of records were missing FACS information at baseline (T1) for the re-ablement group. Nevertheless, higher dependency level among people in the comparison group was also reflected in the significantly higher proportion unable to perform activities of daily living independently compared with those in the re-ablement group. Further multivariate analyses in the final report will need to adjust for the significantly higher dependency level among service users in the comparison group.

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[1] Critical – serious risks to someone's independence, which are likely to occur within 72 hours.

[2] Substantial – significant risks to someone's independence, which are likely to occur between 72 hours and six weeks.

[3] Moderate – significant risks to someone's independence, which are likely to occur between six weeks and six months.

[4] Low – significant risks to someone's independence, which are likely to occur after six months.

There were no differences between the re-ablement and comparison groups at baseline (T1) in terms of the proportions of people receiving help from either within the household (over one-quarter in each group) or from outside the household (over three-fifths in each group).

Table 3.3 Level of need

	Re-ablement group % (n)	*Comparison group* % (n)
FACS	**(n=310)**	**(n=219)**
Critical	3 (10)	12 (26)
Substantial***	34 (106)	63 (138)
Moderate	48 (148)	24 (52)
Low	15 (46)	1 (3)
ADLs		
Unable to get up or down stairs	56 (345)	61 (149)
Unable to get outdoors/walk down road	76 (462)	73 (174)
Unable to get around indoors	11 (67)	15 (35)
Unable to get in/out of bed or chair**	10 (63)	17 (41)
Unable to use WC/toilet*	11 (68)	16 (39)
Unable to wash face and hands**	8 (52)	15 (38)
Unable to bath, shower or wash all over	71 (440)	76 (186)
Unable to get dressed/undressed*	42 (255)	49 (122)
Unable to feed self	4 (23)	7 (16)
Unable to control bladder *	35 (219)	45 (110)
Unable to control bowel	17 (105)	22 (53)
Informal carers	**(n=627)**	**(n=247)**
Help from within household	27 (167)	28 (70)
Help from outside household	64 (401)	62 (154)

Note 1: Significance levels: ***p<0.001 **p<0.01 *p<0.05.

Note 2: Results need to be treated with caution due to the unequal sample sizes in each cell.

3.2 Description of the content of re-ablement services

All results in this section will need to be treated with caution and with the understanding that the results are preliminary. Due to the extended recruitment period and subsequent delays in data collection, data for the full sample of participants has not been analysed for this interim report.

3.2.1 Description of re-ablement period

This section of the report is based on data from the 444 participants for whom completed baseline (T1) and post-intervention (T1+R) questionnaires had been received at the time of analysis.[5]

3.2.1.1 Typical period of re-ablement

The average period of re-ablement was six weeks (minimum less than one week; maximum 23 weeks). The average number of hours involved was 39 (minimum less than one hour; maximum 224 hours). These figures need to be treated with caution as information about the period of re-ablement is still being collected from local authorities at the time of writing this report.

3.2.1.2 Services involved during re-ablement

Information on the professionals involved with the service user during the re-ablement period was provided for 416 participants. Table 3.4 shows the number and percent having involvement from each of the main types of professional. Additional analyses in the final report will explore the impact of the services involved in different types of re-ablement provision (for example local authorities that had an enabler led service and those that had a combined therapy/enabler led service).

Table 3.4 Services involved during re-ablement

	Count	*Per cent*
Re-ablement home care staff	388	93
Home care manager	148	36
Occupational therapist	124	30
Nurse	82	20
Care manager	46	11
Psychotherapist	42	10
Social worker	35	8
Other type of therapist	13	3
Other professional*	22	5

*Other categories of professional were: physiotherapists (4); GPs (4); intermediate care team (2); consultants (2); and the community response team, podiatrist and ‘safe and sound man’ (1 each).

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[5] For data cleaning purposes, the full sample of participants for whom we have completed baseline and post re-ablement data will not be presented in the interim report. The full re-ablement sample will be included in the final report.

3.2.1.3 Reasons for referral to re-ablement service

Information on the reason for referral to the re-ablement team was provided for 429 participants. The majority were referred on discharge from hospital (n=277, 65 per cent) with the next largest category being first time referrals from the community (n=98, 23 per cent). Sixteen (4 per cent) were referred after a review, 15 (4 per cent) on discharge from intermediate care and five (1 per cent) to avoid a hospital admission. Eighteen people (4 per cent) were referred for other reasons, including referral from the GP (6), a crisis such as death of the main carer (3), discharge from a residential home (2), self-referral or referral by another (6) and one person moved into the area.

3.3 Description of costs associated with the service[6]

To date, sufficient information to calculate the total cost per site and the average annual cost per service user was provided by four of the five sites. As the costs of equipment have not been collected yet and not all the sites have returned their costs, this data should be treated with caution. This information and the range of costs for the four sites are shown in Table 3.5 below.

Our basic unit cost for health and social care professionals is the cost per working hour. However, for many purposes, in both research and commissioning, other ‘units’ are more useful; we have therefore also calculated the cost of an hour of service user contact time.

For four of the re-ablement services, total costs range from £922,950 to £7,498,999 with a mean cost per service of £3,703,296. The annual total number of service users ranged from 429 to 3,500 with a mean of 1,886. Table 3.5 shows that the cost per service user ranged from £1,587 to £2,151 with a mean cost per service user for the four sites of £1,963.

The average cost per hour of service user contact time ranged from £37 to £45 with a mean cost of £41 and an average cost per working hour ranged from £19 to £22 with an average cost of £21.

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[6] Detailed description of the costs can be found in Appendix C

Table 3.5 Costs associated with the service

Average costs	*£*	*Ranges*
Total average cost per site	£3,703,296	£922,950-£7,498,999
Average cost per service user	£1,963	£1,587-£2,151
Average cost per hour	£21	£19-£22
Average cost per hour of contact	£41	£37-£45

3.3.1 Care staff costs

The services in the four study sites for which we have information vary greatly in size and staffing numbers. The least costly site (Site R4) has 40 care staff who work varying contracts and the most expensive (Site R1) has 251 FTE care staff. Staffing costs for all sites accounted for between 60 per cent and 62 per cent of total costs (average of 61 per cent). Site R5 also has non-local authority staff who are funded by R5 acute hospital trust embedded in the team.

3.3.2 Overheads

There are two types of overheads, direct overheads and indirect overheads. Direct overheads on the re-ablement service include the administrative and supervision costs, travel and training costs, uniforms and the running cost of the buildings. On average, administrative and supervision costs accounted for 22 per cent of total costs (ranging from 16 per cent to 25 per cent). Travel costs were on average ten per cent of total costs (ranging from 3 per cent to 13 per cent of total costs) and other direct overheads accounted for on average two per cent of total costs (ranging from 1 per cent to 3 per cent).

Indirect overheads are expenses that do not specifically relate to the service and would continue whether the volume of work in this service increased or decreased. Examples are the finance and human resources function. On average these costs ranged from less than one per cent of total costs to ten per cent of total costs with a mean of four per cent.

Average overheads (direct and indirect) for the four services accounted for 39 per cent of total costs (ranging from 38 per cent to 40 per cent).

3.3.3 Capital costs

If the sites were unable to provide an estimation of their capital costs (building and land), an estimate was provided by the research team based on the new build and land requirements for a local authority office. This was adjusted according to the number of desk spaces required for the service. Many of the sites operate a flexible working and desk sharing policy and this has been taken into account when making the estimation and has been approved by the sites. Capital costs were on average less than one per cent of total costs.

Table 3.6 shows the average salary costs for the four sites and the percentage of total costs for each item. A summary for each site can be found in Appendix D.

Table 3.6 Costs and unit estimation

Costs and unit estimation	*2008/09 (£)*	*Proportion of total costs (%)*
Salary plus oncosts	2,268,637	61
Direct overheads		
Administrative and management	823,292	22
Running costs, utilities, training etc.	58,576	2
Travel	385,984	10
Indirect overheads	160,724	4
Capital Costs	6,085	0
Total Costs	**3,703,298**	**100**

Cost per hour £21; cost per hour of service user contact £41; average cost per service user £1,963.

3.4 The impact of re-ablement on dependency levels

To explore the impact of re-ablement on dependency levels, this section examines each of the four outcome measures (perceived health, quality of life, health-related quality of life and social care outcomes) in turn. Each section contains three areas:

1. The overall change between pre- and post-intervention (T1 and T1+R).
2. The degree to which participants changed their responses between pre- and post-intervention.
3. The factors that impacted on the participants' responses before and after receiving re-ablement services.

3.4.1 FACS level

We investigated changes in levels of dependency between pre- and post-intervention. Table 3.7 indicates that after receiving re-ablement services, fewer people were classified as having 'substantial' needs according to FACS criteria (20 per cent compared with 28 per cent at baseline) and more people were classified as having 'low' level FACS needs (23 per cent compared with 17 per cent at baseline).

Table 3.7 Overarching changes in FACS

	Pre-intervention		*Post-intervention*	
	%	(n)	%	(n)
Critical	2	(4)	3	(5)
Substantial	28	(49)	20	(34)
Moderate	52	(89)	55	(94)
Low	17	(30)	23	(39)

What is important when exploring the impact of an intervention is to investigate the direction of movement of participants' responses between time-points. Table 3.8 illustrates the percentages of participants whose FACS levels increased, decreased or stayed the same between pre- and post-intervention. This table shows that 21 per cent (n=36) were classified in a lower FACS level after re-ablement and 67 per cent (116) stayed the same. The results need to be treated with caution due to a large proportion of missing data for the re-ablement group (61 per cent; 272 records were missing FACS data). In addition, it may require a longer period than six weeks to show a difference in the FACS level.

Table 3.8 Direction of change in FACS levels

Movement in response	*%*	*(n)* **n=172**
Lower FACS level at post-intervention	21	(36)
Same FACS level at post-intervention	67	(116)
Higher FACS level at post-intervention	12	(20)

3.4.2 Informal care

Table 3.9 shows little overall change between pre- and post-intervention in the percentage of service users receiving practical help from someone living in the same household or in another household.

Table 3.9 Overarching changes in receipt of informal care

	Pre-intervention		*Post-intervention*	
	%	(n)	%	(n)
Received informal care from someone in same household	25	(110)	24	(105)
Received informal care from someone outside household	67	(295)	65	(281)
Did not receive any informal care	15	(64)	16	(68)

Table 3.10 shows that 92 per cent (n=395) did not change their situation in terms of receiving practical help from someone within the household. A small proportion of service users (4 per cent; n=17) began to receive practical support from inside the household after the intervention and a further five per cent (20) stopped receiving this support. However, perhaps we would not expect much to change for care within the household as people are not going to move in with relatives or move out in such a short time over a six week period.

Table 3.10 Direction of change - informal care within the household

Movement in response	*%*	*(n)* **n=342**
Started getting care after re-ablement	4	(17)
Much the same	92	(395)
Stopped getting care after re-ablement	5	(20)

Table 3.11 shows more change in responses before and after the intervention in terms of receiving practical help from someone outside the household. The situation remained the same for 78 per cent (n=336) of service users, while ten per cent (45) began to receive practical help from someone outside the household and 12 per cent (n=51) stopped receiving this support.

Table 3.11 Direction of change - informal care outside the household

Movement in response	*%*	*(n)* **n=342**
Started getting care after re-ablement	10	(45)
Much the same	78	(336)
Stopped getting care after re-ablement	12	(51)

3.4.3 Ability to undertake activities of daily living

After receiving the re-ablement service, participants reported a small improvement in the ability to perform activities of daily living (mean 6.51; sd 2.19) compared with pre-intervention (6.04; sd 2.07; p< 0.001). Table 3.12 shows that there were improvements in dependency levels after the intervention in terms of having the ability to: get out of doors and walk down the road; wash face and hands; have a bath, shower or wash all over; get dressed and undressed; and having control of the bladder.

Table 3.12 Overarching changes in dependency levels

Activities of daily living	*Pre-intervention*	*Post-intervention*
Able to get up or down stairs	44 (184)	48 (202)
Able to get outdoors/walk down road**	26 (109)	33 (137)
Able to get around indoors	89 (373)	88 (369)
Able to get in/out of bed or chair	90 (384)	90 (384)
Able to use WC/toilet	90 (386)	90 (390)
Able to wash face and hands**	89 (387)	94 (406)
Able to bath, shower or wash all over***	27 (114)	41 (177)
Able to get dressed/undressed***	58 (250)	73 (312)
Able to feed self	95 (414)	97 (425)
Able to control bladder ***	64 (276)	75 (324)
Able to control bowel	83 (353)	88 (376)

Note: Significance Levels: ***p< 0.001; **p< 0.01; *p< 0.05.

Table 3.13 illustrates the percentages of participants who gained or lost the ability to undertake activities of daily living between pre- and post-intervention. Receiving the re-ablement service seemed to have the most impact on two activities: becoming able to bath, shower or wash all over (21 per cent became able to perform this activity) and becoming able to get dressed or undressed (19 per cent became able to perform this activity).

Table 3.13 Direction of change in ability to undertake activities of daily living

Movement in response	*%*	*(n)*
Ability to get up or down stairs (n=421)		
Became able after re-ablement	12	(50)
Ability unchanged after re-ablement	81	(339)
Became unable after re-ablement	8	(32)
Ability to get outdoors and walk down the road (n=419)		
Became able after re-ablement	14	(59)
Ability unchanged after re-ablement	79	(329)
Became unable after re-ablement	7	(31)
Ability to get around indoors (n=420)		
Became able after re-ablement	4	(20)
Ability unchanged after re-ablement	90	(376)
Became unable after re-ablement	6	(24)
Ability to get in or out of bed or chair (n=429)		
Became able after re-ablement	4	(17)
Ability unchanged after re-ablement	92	(395)
Became unable after re-ablement	4	(17)
Ability to use the WC (n=434)		
Became able after re-ablement	4	(17)
Ability unchanged after re-ablement	93	(404)
Became unable after re-ablement	3	(13)
Ability to wash face and hands (n=433)		
Became able after re-ablement	6	(28)
Ability unchanged after re-ablement	91	(396)
Became unable after re-ablement	2	(9)
Ability to bath, shower or wash all over (n=429)		
Became able after re-ablement	21	(90)
Ability unchanged after re-ablement	73	(312)
Became unable after re-ablement	6	(27)
Ability to get dressed/undressed (n=430)		
Became able after re-ablement	19	(80)
Ability unchanged after re-ablement	77	(332)
Became unable after re-ablement	4	(18)
Ability to feed self (n=435)		
Became able after re-ablement	4	(17)
Ability unchanged after re-ablement	95	(412)
Became unable after re-ablement	1	(6)

After receiving re-ablement, 17 per cent (74) had more control of their bladder and 11 per cent (45) had more control over their bowels. The level of control of bladder and bowels did not change post-re-ablement for 77 per cent (n=332) and 84 per cent (n=395) respectively.

3.5 The impact of re-ablement on outcomes

To explore the impact of re-ablement on outcomes, this section investigates each of the four outcome measures (perceived health, quality of life, health-related quality of life and social care outcomes) in turn. Each section covers four areas:

1. The overall change between pre and post-intervention.
2. The degree to which participants changed their responses between pre- and post-intervention.
3. The factors that impacted on the participants' outcome response before and after receiving re-ablement services.
4. The characteristics of re-ablement service users and of re-ablement service interventions themselves that were associated with service user perceived health, quality of life and social care outcomes.

3.5.1 The impact of re-ablement services on perceived health

3.5.1.1 Overall changes in self-perceived health

After receiving the intervention, people reported significantly better perceived health (mean 2.8, SD 0.93) compared with pre-intervention (mean 2.9; SD 0.97; $p<0.01$). A lower score represents an improvement in perceived health. Although this is statistically significant, it was actually only a small difference demonstrating that there was a slight short-term improvement after receiving the intervention. Table 3.14 shows the overall change in perceived health prior to the intervention as compared with post-intervention.

Table 3.14 Overall changes in self-perceived health status

	Pre-intervention		*Post-intervention*	
	%	(n)	%	(n)
Perceived health (n=433)				
Very good	7	(31)	8	(34)
Good	23	(98)	28	(121)
Fair	46	(200)	46	(197)
Bad	18	(78)	15	(63)
Very bad	6	(26)	4	(18)

3.5.1.2 Direction of change in self-perceived health

Table 3.15 shows the direction of changes in perceived health between pre- and post-re-ablement. This table indicates that 30 per cent (128) reported improved perceived health after receiving re-ablement services, while 19 per cent (83) reported that their health had declined.

Table 3.15 Direction of change in perceived health

Movement in response	*%*	*(n)*
Perceived health (n=433)		
Perceived health declined	19	(83)
Much the same	51	(222)
Perceived health better	30	(128)

3.5.1.3 Factors impacting on self-perceived health pre- and post-intervention

Table 3.16 analyses the mean scores for perceived health by sample characteristics such as gender and by dependency. This table indicates that perceived health before the intervention was positively associated with: being female ($p<0.05$); living alone ($p<0.01$); owner occupier ($p<0.01$); and not living in the same household as the informal carer ($p<0.01$). These factors are independent of each other. When interpreting the results, caution is required due to the unequal sample size and the small numbers in some cells.

A similar pattern of results was evident also post-intervention. In addition, better perceived health was significantly associated after re-ablement with receiving practical help from someone outside the household ($p<0.05$) and being classified as being at the low FACS threshold ($p<0.001$).

Table 3.16 Perceived health by sample characteristics and dependency

	Perceived health pre-intervention		*Perceived health post-intervention*	
	Mean	(n, sd)	Mean	(n, sd)
Age				
Under 65 years	3.40	(25, 1.04)	2.86	(28, 0.93)
65 years or over	2.92	(412, 0.94)	2.80	(407, 0.93)
Gender				
Male	3.09	(128, 0.86)*	3.04	(127, 0.92)***
Female	2.87	(307, 0.99)	2.70	(303, 0.92)
Ethnicity				
White British or Irish	2.88	(403, 0.94)	2.73	(396, 0.93)
Other	3.58	(33, 0.97)	3.36	(33, 0.70)
Living alone				
No	3.14	(134, 1.00)**	2.97	(131, 0.94)**
Yes	2.85	(305, 0.94)	2.74	(303, 0.92)
Owner occupier				
No	3.07	(161, 0.94)**	2.94	(158, 0.95)**
Yes	2.80	(246, 0.99)	2.66	(244, 0.94)
Informal carer				
Living in household				
No	2.86	(330, 0.95)**	2.73	(326, 0.93)**
Yes	3.17	(110, 0.98)	3.04	(104, 0.92)
Living in another household				
No	3.05	(147, 1.01)	2.94	(145, 0.93)*
Yes	2.88	(293, 0.94)	2.73	(289, 0.92)
FACS criteria				
Critical or substantial	2.91	(80, 1.03)	2.98	(57, 1.01)***
Moderate	2.89	(103, 0.82)	2.84	(122, 0.84)
Low	2.61	(38, 0.92)	2.30	(47, 0.93)

Note 1: Higher scores represent worse perceived health.
Note 2: Significance levels: ***p<0.001; **p<0.01; *p<0.05.
Note 3: People aged over 65 years of age reported significantly better health pre-intervention. Due to the small sample being under 65 years of age, this significance has not been reported in the table.
Note 4: People from a BME community reported significantly worse health pre- and post- intervention. Due to the small sample belonging to a BME community, this significance has not been reported in the table.

3.5.1.4 Predictors of perceived health status between pre- and post-intervention

The results presented above are univariate comparisons, that is, they look at the impact of characteristics on self-perceived health independently. Often, however, these characteristics are themselves correlated (i.e. the impact of one characteristic variable is conditional on the impact of the others) and so there is value in undertaking 'mutli-variate' analyses.

We use multiple regression analysis and in view of the dataset being of the form where each person has pre- and post- re-ablement observations, we use 'panel' data regression methods. The Hausman test was non-significant, indicating that a random effects model would be appropriate (Hausman, 1978). However to provide a useful comparison with one another regarding the stability of coefficient estimates, Table 3.17 presents findings from both a fixed and random effects model. The results showed that these models produced very similar coefficients. A second random effects model was constructed with local authority dummy variables to explore the impact of local authority effects on perceived health.

Table 3.17 indicates that both the fixed effects and random effects estimation explained 13 per cent of the variance in perceived health. We also estimated a pooled regression model for comparison which treats time period data as independent. The pooled model showed no omitted variable error (using a RESET test) which is suggestive that the fixed and random effects models are also unaffected by this problem (although we did not test specifically in this case).

Among the demographic characteristics, being female and older had a positive impact on perceived health. In terms of the impact of dependency levels, three activities had a significant impact on perceived health. These were having the ability to: bath, shower or wash all over; dress or undress; and to go out of doors and walk down the road. After controlling for local authority effects, being female and age still had a significant positive impact on perceived health. Having the ability to bath, shower or wash all over and go out of doors and walk down the road remained significant predictors of perceived health which demonstrates the importance of both factors in the model. In terms of the impact of area effects on perceived health, local authority R2 had a negative impact on perceived health.

Further analysis indicated that a smaller difference in perceived health between pre- and post-intervention was associated with being able to perform more activities of daily living. A higher degree of improvement in perceived health was associated with receiving the re-ablement service in R3.

Table 3.17 Predictors of perceived health

Independent variables	*Fixed effects*	*Random effects*	*Random effects (including dummy variables for LA)*
Age	0.01**	0.01**	0.01**
Female service user	0.25***	0.25***	0.16*
Ability to bath, shower or wash all over	0.29***	0.30***	0.29***
Ability to dress/undress	0.20*	0.21**	0.03
Ability to go out doors and walk down the road	0.21*	0.21**	0.20*
Ability to get up and down stairs or steps	0.12	0.12	0.07
Local authority R1	-	-	-
Local authority R2	-	-	-0.66***
Local authority R3	-	-	-0.02
Local authority R4	-	-	-0.13
Local authority R5	-	-	-0.16
Constant	1.85***	1.86***	2.33***
Prob > F(6,795)	19.43***	-	-
R^2	13%	13%	20%
Wald chi-square test	-	121.80	195.78
Prob>chi^2	-	0.000	0.000

Dependent variable: Perceived health.
Significance levels: ***p<0.001; **p<0.01; *p< 0.05.

3.5.2 The impact of re-ablement services on perceived quality of life

3.5.2.1 Overall change in perceived quality of life

Table 3.18 shows the overall change in perceived quality of life between pre- and post-intervention. After receiving re-ablement, service users reported significantly better quality of life (mean 3.5; SD 1.1; p<0.05) compared with before the intervention (mean 3.6; SD 1.1). A lower score represents an improvement in quality of life. Although this is a statistically significant difference, it was actually only a small difference indicating that there was a slight improvement in perceived quality of life after receiving the intervention.

Table 3.18 Overarching changes in perceived quality of life

	Pre-intervention		*Post-intervention*	
	%	(n)	%	(n)
Quality of life (n=421)				
So good, it could not be better	1	(4)	1	(5)
Very good	15	(65)	16	(67)
Good	27	(112)	33	(141)
Alright	40	(170)	36	(151)
Bad	12	(50)	9	(36)
Very bad		(13)	3	(13)
So bad, it could not be worse	2	(7)	2	(8)

3.5.2.2 Direction of change in perceived quality of life

Table 3.19 shows the direction of changes in perceived quality of life between pre- and post-re-ablement. This table demonstrates that 21 per cent of individuals reported that their quality of life was worse after than before the intervention. It is not possible in the analysis to indicate whether this decline was actually due to receiving the intervention. However, 30 per cent (n=203) reported improvements after receiving the re-ablement service, compared with their reported quality of life before the intervention.

Table 3.19 Direction of change in quality of life

Movement in response	*%*	*(n)*
Quality of life (n=421)		
Quality of life declined	21	(90)
Much the same	48	(203)
Quality of life better	30	(128)

3.5.2.3 Factors impacting on quality of life

Table 3.20 gives the mean scores for quality of life by sample characteristics such as age and gender, and by dependency. Before receiving the intervention, better perceived quality of life was associated with: being female ($p<0.05$); living alone ($p<0.05$); not living with the informal carer ($p<0.05$); and receiving practical help from someone outside of the household ($p<0.05$). The pattern of results was also evident in the post-re-ablement outcome measures. In addition, post-intervention, better perceived quality of life was associated with being classified as ‘low’ in terms of the FACS criteria ($p<0.05$). All factors are independent of each other. When interpreting these results, caution is required due to the unequal sample size and the small numbers in some cells.

Table 3.20 Quality of life by sample characteristics and dependency

Perceived quality of life	*Pre-intervention*		*Post-intervention*	
	Mean	(n, sd)	Mean	(n, sd)
Age				
Under 65 years	3.72	(25, 0.89)	3.75	(24, 0.94)
65 years or over	3.63	(407, 1.11)	3.51	(400, 1.10)
Gender				
Male	3.80	(125, 1.03)*	3.77	(123, 1.13)**
Female	3.55	(305, 1.13)	3.40	(299, 1.08)
Ethnicity				
White British or Irish	3.59	(397, 1.10)	3.47	(389, 1.12)
Other	4.00	(33, 1.10)	3.94	(32, 0.91)
Living alone				
No	3.81	(132, 1.09)*	3.82	(132, 1.08)***
Yes	3.55	(302, 1.11)	3.36	(292, 1.07)
Owner occupier				
No	3.59	(159, 1.14)	3.50	(155, 1.16)
Yes	3.67	(245, 1.11)	3.54	(241, 1.10)
Informal carer living in household				
No	3.56	(328, 1.10)*	3.41	(315, 1.08)***
Yes	3.84	(107, 1.09)	3.85	(102, 1.13)
Living in another household				
No	3.82	(145, 1.14)*	3.74	(148, 1.15)**
Yes	3.53	(290, 1.08)	3.40	(269, 1.07)
FACS criteria				
Critical or substantial	3.39	(78, 0.96)	3.38	(56, 1.21)*
Moderate	3.62	(102, 0.98)	3.59	(123, 0.85)
Low	3.45	(38, 0.89)	3.09	(47, 1.06)

Note 1: Significance levels: ***p<0.001; **p<0.01; *p<0.05.
Note 2: Lower scores indicate better quality of life.
Note 3: People from a BME community reported significantly worse quality of life pre- and post-intervention. Due to the small sample belonging to a BME community, this significance has not been reported in the table.

3.5.2.4 Multivariate analysis

As regards the quality of life indicator, the Hausman test was non-significant, indicating that a random effects model would be appropriate (Hausman, 1978). However as mentioned previously we have reported the coefficient estimates for both the fixed and random effects model, including local authority dummy variables.

Table 3.21 indicates that both the fixed effects and random effects estimation explained ten per cent of the variance in perceived quality of life (the pooled model also successfully fulfilled the RESET test for omitted variable bias). Among the demographic characteristics, age had a positive impact on perceived quality of life. In terms of the impact of dependency levels, three activities had a significant impact on perceived quality of life. These were having the ability to: go out of doors and walk down the road; get around indoors; and to transfer from the bed to the chair. In terms of the FACS criteria, having some risk to independence which is likely to occur over the next six weeks to six months (moderate FACS level) had a significant negative impact on perceived quality of life. After controlling for local authority effects, age and having the ability to go out of doors and walk down the road remained significant predictors of perceived quality of life, which demonstrates their importance in the model. The local authority area in which the participant lived did not have a significant impact on quality of life. Further analysis indicated that a higher level of improvement in perceived quality of life was associated with receiving re-ablement services in either R3 or R5.

Table 3.21 Predictors of perceived quality of life

Independent variables	*Fixed effects*	*Random effects*	*Random effects (including dummy variables for LA)*
Age	0.13**	0.13**	0.01**
Ability to go out doors and walk down the road	0.39**	0.41***	0.43***
Ability to get around indoors	0.09	0.09	0.10
Ability to transfer from bed to chair	0.39*	0.38*	0.34
Moderate FACS criteria	-0.25**	-0.24**	-0.17
Local authority R1	-	-	-
Local authority R2	-	-	-0.34
Local authority R3	-	-	-0.38
Local authority R4	-	-	-0.20
Local authority R5	-	-	-0.61
Constant	3.09***	3.08***	3.41***
Prob > F(5,412)	9.48***	-	-
R^2	10%	10%	11%
Wald chi-square test	-	47.35	52.04
Prob>chi^2	-	0.000	0.000

Dependent variable: Perceived quality of life.
Significance levels: ***p<0.001; **p<0.01; *p<0.05.

3.5.3 The impact of re-ablement services on health-related quality of life (EQ-5D)

3.5.3.1 Overall changes in health-related quality of life

Table 3.22 gives the overall changes in health-related quality of life measured using the EQ-5D. Changes in the mean overall score are followed by differences on each individual domain. A higher score indicates an improvement in health-related quality of life. Prior to receiving the intervention, the mean score was 0.35 compared with 0.46 after receiving re-ablement services. As such, the percentage overall difference between pre- and post-intervention is an increase of 11 per cent.

There were significant improvements on each of the individual domains after re-ablement. Table 3.22 also shows the overall positive change between pre- and post-intervention on the single ‘health today’ item. After receiving re-ablement services, 21 per cent (89) of respondents reported that their health was better than in the previous 12 months compared with only nine per cent (38) before the intervention.

Table 3.22 Overarching changes in health-related quality of life measured using the EQ-5D

	Pre-intervention		*Post-intervention*	
	%	(n)	%	(n)
EQ-5D overall score (n=415)				
Mean score (sd)***	0.35	(0.30)	0.46	(0.32)
Mobility (n=433)				
No problems	13	(56)	21	(90)
Some problems	84	(365)	77	(333)
Confined to bed	3	(12)	2	(10)
Self-care (n=433)				
No problems	19	(82)	42	(183)
Some problems	67	(292)	43	(186)
Unable	14	(59)	15	(64)
Usual activities (n=434)				
No problems	7	(31)	16	(69)
Some problems	44	(192)	45	(199)
Unable	49	(211)	38	(166)
Pain/discomfort (n=426)				
None	21	(90)	28	(121)
Moderate	60	(256)	59	(253)
Extreme	19	(80)	12	(52)

	Pre-intervention		*Post-intervention*	
	%	(n)	%	(n)
Anxiety/depression (n=436)				
None	56	(242)	64	(277)
Moderate	39	(169)	31	(135)
Extreme	6	(25)	6	(24)
General health today (n=434)				
Better than previous 12 months	9	(38)	21	(89)
Much the same	29	(124)	30	(132)
Worse than previous 12 months	63	(272)	49	(213)

Note: Significance level ***p<0.001.

3.5.3.2 Direction of change in health-related quality of life

In exploring individual ‘movements’ between the different levels in each of the health-related quality of life domains, Table 3.23 demonstrates that a greater percentage of respondents had fewer rather than more problems post-re-ablement on each domain, ranging from 14 per cent (mobility domain) to 31 per cent (self care domain).

Table 3.23 Direction of change in health-related quality of life

Movement in response	*%*	*(n)*
Mobility (n=433)		
Fewer problems after re-ablement	14	(59)
No change after re-ablement	81	(351)
More problems after re-ablement	5	(23)
Self-care (n=433)		
Fewer problems after re-ablement	31	(134)
No change after re-ablement	59	(254)
More problems after re-ablement	10	(45)
Usual activities (n=434)		
Fewer problems after re-ablement	28	(121)
No change after re-ablement	61	(266)
More problems after re-ablement	11	(47)
Pain/discomfort (n=426)		
Fewer problems after re-ablement	26	(112)
No change after re-ablement	61	(259)
More problems after re-ablement	13	(55)

Movement in response	*%*	*(n)*
Anxiety/depression (n=436)		
Fewer problems after re-ablement	21	(90)
No change after re-ablement	65	(285)
More problems after re-ablement	14	(61)
General health today (n=434)		
Improved general health today	30	(130)
No change	59	(254)
Decline in general health today	12	(50)

The table also shows that in reporting general health today, 12 per cent of individuals moved down one option post-re-ablement compared with pre-re-ablement, 59 per cent reported that their health was ‘much the same’, whilst 30 per cent reported that their health had improved. It should be acknowledged when interpreting the results that health-related quality of life was measured using the EQ-5D. This measure uses broad categories for responses to each domain that may not be sensitive enough to capture all changes in quality of life. People receiving the intervention may indeed be improving in their health-related quality of life but not improving sufficiently to move between categories, for example from the ‘some problems’ to the ‘no problems’ category.

3.5.3.3 Factors impacting on health-related quality of life

Table 3.24 gives the mean scores for health-related quality of life by sample characteristics such as age and gender, and by dependency. This table indicates that a positive health-related quality of life before the intervention was significantly associated with living alone (p<0.01); receiving practical help from someone outside the household (p<0.05); and being classified as ‘low’ according to FACS criteria (p<0.05). All variables were independent of each other. When interpreting the results, caution is required due to the unequal sample size and the small numbers in some cells.

Table 3.24 Health status by sample characteristics and dependency

EQ-5D tariff	*Pre-intervention*		*Post-intervention*	
	Mean	(n, sd)	Mean	(n, sd)
Age				
Under 65 years	0.20	(24, 0.27)	0.40	(24, 0.33)
65 years or over	0.36	(398, 0.36)	0.46	(404, 0.32)
Gender				
Male	0.34	(121, 0.29)	0.41	(125, 0.32)
Female	0.35	(300, 0.31)	0.47	(301, 0.32)
Ethnicity				
White British or Irish	0.36	(391, 0.30)	0.48	(394, 0.32)
Other	0.19	(31, 0.24)	0.23	(32, 0.31)
Living alone				
No	0.28	(126, 0.29)**	0.32	(130, 0.30)***
Yes	0.37	(298, 0.30)	0.52	(298, 0.31)
Owner occupier				
No	0.34	(158, 0.30)	0.43	(156, 0.34)*
Yes	0.36	(237, 0.30)	0.50	(242, 0.31)
Informal carer				
Living in household				
No	0.36	(323, 0.31)	0.50	(320, 0.31)***
Yes	0.31	(102, 0.28)	0.33	(101, 0.31)
Living in another household				
No	0.30	(139, 0.29)*	0.41	(148, 10.33)*
Yes	0.37	(286, 0.30)	0.49	(273, 0.31)
FACS criteria				
Critical or substantial	0.30	(76, 0.32)*	0.34	(56, 0.32)***
Moderate	0.38	(101, 0.29)	0.39	(122, 0.33)
Low	0.44	(36, 0.29)	0.67	(46, 0.26)

Note 1: Significance levels: ***p<0.001; **p<0.01; *p<0.05.
Note 3: People aged over 65 years of age reported significantly better health-related quality of life pre-intervention. Due to the small sample being under 65 years of age, this significance has not been reported in the table.
Note 4: People from a BME community reported significantly worse health-related quality of life pre- and post- intervention. Due to the small sample belonging to a BME community, this significance has not been reported in the table.

After the intervention, a better health-related quality of life was associated with: living alone (p<0.001); being an owner occupier (p<0.05); receiving practical help from someone outside the household (p<0.05); and being classified as ‘low’ in terms of the FACS criteria (p<0.001).

3.5.3.4 Multivariate analysis

For health-related quality of life we also estimated both the fixed and random effects models (the Hausman test) was significant, indicating that a fixed effects model is appropriate (Hausman, 1978).

Table 3.25 indicates that both the fixed and random effects estimation explained 28 per cent of the variance in health-related quality of life (and the pooled model showed no omitted variable error). Among the demographic characteristics, age had a positive impact on health-related quality of life. In terms of the impact of dependency levels, three activities had a significant impact on perceived quality of life. These were having the ability to: get up and down the stairs; go out of doors and walk down the road; and to get dressed or undressed.

Table 3.25 Predictors of health–related quality of life (EQ-5D)

Independent variables	*Fixed effects*	*Random effects*	*Random effects (including dummy variables for LA)*
Age	0.01**	0.01**	0.01**
Ability to get up and down the stairs	0.10***	0.10***	0.09***
Ability to get out of doors and walk down the road	0.10***	0.11***	0.11***
Ability to get dressed and undressed	0.18***	0.20**	0.16***
Ability to us the toilet	0.11**	0.10**	0.08*
Local authority R1	-	-	-0.001
Local authority R2	-	-	-0.14**
Local authority R3	-	-	-0.04
Local authority R4	-	-	-0.03
Local authority R5	-	-	-
Constant	-0.16*	-0.15 ns	-0.05 ns
Prob > F(5,791)	58.65***	-	-
R^2	28%	28%	30%
Wald chi-square test	-	308.33	343.96
Prob>chi^2	-	0.000	0.000

Note 1: Dependent variable: Health-related quality of life.
Note 2: Significance levels: ***p<0.001; **p<0.01; *p<0.05.

After controlling for local authority effects, all the significant predictors remained in the model demonstrating the importance of each variable in predicting health-related quality of life. Local authority R2 had a negative impact on health-related quality of life. The overall variance that was explained when local authority dummy variables were included in the model was 30 per cent, indicating only a two per cent increase compared with when the variables were not included. Further analysis indicated that a smaller difference in health-related quality of life between pre- and post-intervention was associated with being older. A higher degree of improvement in health-related quality of life was associated with receiving the re-ablement service in R3 or R4.

3.5.4 Impact of re-ablement on social care outcomes

3.5.4.1 Overall changes in social care outcomes measured using ASCOT

Table 3.26 shows the overall positive changes between pre- and post-intervention on social care outcomes. Service users reported better social care outcomes after they received re-ablement services (mean 20.47, p<0.001) compared with pre-intervention (mean 19.34). For a number of domains there were significant differences in responses at pre- and-post intervention. When interpreting the results, caution is required due to the unequal sample size and the small numbers in some cells.

Table 3.26 Changes in social care outcome measure using ASCOT

	Pre-intervention		*Post-intervention*	
	%	(n)	%	% (n)
Current need (n=424)				
Mean score (sd)***	19.34	(5.32)	20.47	(8.51)
Control over daily life (n=433)**				
No needs	43	(189)	54	(236)
Low needs	45	(196)	34	(149)
High needs	12	(54)	12	(54)
Personal care/comfort (n=437)				
No needs	81	(356)	93	(405)
Low needs	16	(71)	6	(28)
High needs	2	(10)	1	(4)
Meals and nutrition (n=438)***				
No needs	77	(336)	87	(382)
Low needs	18	(81)	12	(52)
High needs	5	(21)	1	(4)
Safety (n=438)***				
No needs	65	(286)	80	(349)
Low needs	32	(138)	19	(84)
High needs	3	(14)	1	(5)
Social situation and relationships (n=437)				
No needs	49	(212)	52	(226)
Low needs	40	(176)	37	(162)
High needs	11	(49)	11	(49)
Usual activities (n=437)*				
No needs	16	(70)	20	(88)
Low needs	30	(131)	31	(135)
High needs	54	(236)	49	(214)

	Pre-intervention		*Post-intervention*	
	%	(n)	%	% (n)
Accommodation cleanliness/comfort (n=435)*				
No needs	85	(370)	88	(384)
Low needs	13	(56)	11	(46)
High needs	2	(9)	1	(5)
Worries and concerns (n=437)*				
No needs	38	(163)	42	(184)
Low needs	52	(227)	49	(214)
High needs	11	(47)	9	(39)
Dignity and respect (n=434)				
No needs	92	(404)	96	(416)
Low needs	8	(33)	4	(17)
High needs	0	(0)	0	(1)
Supporting others (n=102)				
No needs	31	(32)	34	(35)
Low needs	27	(28)	27	(28)
High needs	41	(42)	38	(39)

Note 1: Significance levels: *** p>0.001; **p< 0.01; * p< 0.05.

3.5.4.2 Direction of change in social care outcomes

In exploring individual ‘movements’ between the different levels within each domain (‘no needs’, ‘same level of needs’, ‘high needs’), Table 3.27 demonstrates that a proportion of service users (ranging from six per cent to 25 per cent) reported a lower level of need, indicating a positive impact of re-ablement on self-reported social care outcomes in the short-term.

On a less positive note, a proportion of service users (ranging from three per cent to 19 per cent) reported a higher level of need after receiving re-ablement services. The findings, and the other findings in this report, need to be treated with caution as the analysis was run on an incomplete dataset. Further analysis in the final report will be required to explore whether the outcome change is sustained long-term and was due to receiving the intervention.

Table 3.27 Direction of change in social care outcome

Movement in response	*%*	*(n)*
Control over daily life (n=439)		
Lower level of need	25	(108)
Same level of need	61	(266)
Higher level of need	15	(65)
Personal care/comfort (n=437)		
Lower level of need	14	(61)
Same level of need	83	(363)
Higher level of need	3	(13)
Meals and nutrition (n=438)		
Lower level of need	17	(75)
Same level of need	77	(337)
Higher level of need	6	(26)
Safety (n=438)		
Lower level of need	21	(93)
Same level of need	72	(314)
Higher level of need	7	(31)
Social situation and relationships (n=437)		
Lower level of need	22	(98)
Same level of need	58	(255)
Higher level of need	19	(84)
Usual activities (n=437)		
Lower level of need	24	(103)
Same level of need	60	(262)
Higher level of need	16	(72)
Accommodation cleanliness/comfort (n=435)		
Lower level of need	10	(42)
Same level of need	85	(368)
Higher level of need	6	(25)
Worries and concerns (n=437)		
Lower level of need	25	(109)
Same level of need	57	(248)
Higher level of need	18	(80)
Dignity and respect (n=434)		
Lower level of need	6	(25)
Same level of need	92	(398)
Higher level of need	3	(11)
Supporting others (n=102)		
Lower level of need	19	19 (19)
Same level of need	69	69 (70)
Higher level of need	13	13 (13)

3.5.4.3 Factors impacting on social care outcomes (ASCOT)

Table 3.28 gives the mean scores for social care outcomes by sample characteristics such as age and gender, and by dependency.

Table 3.28 Factors impacting on ASCOT

Social care outcomes	*Pre-intervention*		*Post-intervention*	
	Mean	(n, sd)	Mean	(n, sd)
Age				
Under 65 years	15.09	(24, 6.52)	19.00	(25, 6.46)
65 years or over	19.60	(401, 5.11)	20.50	(406, 8.61)
Gender				
Male	18.05	(124, 5.27)**	19.71	(126, 5.31)
Female	19.93	(299, 5.28)	20.69	(303, 49.47)
Ethnicity				
White British or Irish	19.57	(393, 5.20)	20.68	(396, 8.61)
Other	16.80	(32, 5.92)	17.93	(32, 5.76)
Living alone				
No	17.66	(130, 5.51)***	19.44	(132, 4.90)
Yes	20.10	(297, 5.03)	20.91	(299, 4.98)
Owner occupier				
No	19.59	(159, 5.57)	21.04	(159, 5.66)
Yes	19.57	(238, 5.07)	20.34	(242, 10.21)
Informal carer				
Living in household				
No	19.73	(321, 5.22)*	20.55	(321, 9.36)
Yes	18.26	(107, 5.38)	19.76	(103, 5.18)
Living in another household				
No	18.05	(143, 5.28)***	19.09	(149, 9.84)*
Yes	20.03	(285, 5.19)	21.05	(275, 7.67)
FACS criteria				
Critical or substantial	19.16	(77, 6.04)	19.65	(57, 5.05)
Moderate	18.91	(102, 5.11)	18.80	(123, 10.26)
Low	19.89	(36, 5.03)	23.07	(47, 4.76)

Note 1: A higher score indicates better social care outcomes.

Note 2: People aged over 65 years of age reported significantly better social care outcomes pre-intervention. Due to the small sample being under 65 years of age, this result has not been reported in the table.

Note 3: People from a BME community reported significantly worse social care outcomes pre-intervention. Due to the small sample belonging to a BME community, this result has not been reported in the table.

Pre-intervention, better social care outcomes were significantly associated with: being female ($p<0.001$); living alone ($p<0.01$); receiving practical help from someone in another household ($p<0.001$); and not receiving practical help from someone in the household ($p<0.05$).

A consistent pattern of factors impacting on better social care outcomes was found within responses after receiving re-ablement services. When interpreting the results, caution is required due to the unequal sample size and the small numbers in some cells.

3.5.4.4 Multivariate analysis

The Hausman test was significant, indicating that a fixed effects model would be appropriate (Hausman, 1978). For comparison reasons the coefficient estimates for both the fixed and random effect models have been presented in Table 3.29. This table indicates that both the fixed and random effects estimation explained 28 per cent of the variance in social care outcomes. The pooled model showed no omitted variable error.

Table 3.29 Predictors of social care outcomes

Independent variables	*Fixed effects*	*Random effects*	*Random effects (including dummy variables for LA)*
Age	0.07***	0.06**	0.07***
Gender	0.87*	0.89*	0.56
Ability to get out of the house and walk down the road	1.16**	1.20**	1.22**
Ability to transfer from bed to chair	1.85**	1.70**	1.44*
Ability to bath, shower or wash all over	1.31**	1.46**	1.32**
Ability to dress	1.00*	1.16*	0.44
Living alone	0.87*	0.83*	0.79
Local authority R1	-	-	-
Local authority R2	-	-	-2.72***
Local authority R3	-	-	-0.78
Local authority R4	-	-	-0.59
Local authority R5	-	-	0.98
Constant	10.43*	10.58***	12.46***
Prob > F(7,785)	19.02***	-	-
R^2	15%	15%	19%
Wald chi-square test	-	140.51	179.45
Prob>chi^2	-	0.000	0.000

Dependent variable: Social care outcomes (ASCOT).
Significance levels: ***p<0.001; **p<0.01; *p< 0.05.

Among the demographic characteristics, age, gender and living alone had a significant positive impact on social care outcomes. In terms of the impact of dependency levels, four activities had a significant impact on social care outcomes. These were having the ability to: go out of doors and walk down the road; transfer from the bed to the chair; bath, shower or wash all over; get dressed or undressed. After controlling for local authority effects, age and three activities of daily living remained significant predictors of social care outcomes, demonstrating their importance in the model.

Further analysis in the final report will be able to indicate whether services that enhance these activities are likely to generate improvements in social care outcomes. Local authority R2 had a significant negative impact in predicting social care outcomes. Further analysis indicated that a smaller difference in social care outcomes between pre- and post-intervention was associated with being older. A higher degree of improvement in social care outcomes was associated with receiving the re-ablement service in R3. A smaller degree of change was associated with receiving re-ablement services in R2.

Chapter 4 Discussion

The study used a prospective design. A key advantage over studies that collect outcome information at only one time point is that changes in outcomes are collected pre- and post-intervention, rather than relying on participants' recollections of their pre-intervention situation. Each participant was assessed in terms of outcomes on two occasions (pre- and post-intervention) and therefore the observations form a hierarchical structure, with repeated measurements. The predictors of outcomes (for example dependency levels and living arrangements) were also incorporated into the assessment at both time points enabling the researchers to explore in great depth the factors associated with outcomes.

There are a number of limitations to the analysis presented in this interim report; these were described in more detail at the beginning of the Results section. The main limitations when interpreting the results are that the analysis is based on an incomplete dataset and at this stage the impacts of re-ablement are not compared with any other service. Thus it is not possible to conclude that any changes in participants' outcomes were due to the re-ablement services. Analysis of the full dataset and a comparison of the long-term impacts of re-ablement compared to traditional home care services will be provided in the final report.

We found that the sample in the comparison group was more dependent at baseline compared with those in the re-ablement group in terms of FACS and activities of daily living. For the final report, adjustments will need to be done in the multivariate analysis to take account of the differences at baseline between both groups.

Notwithstanding these caveats, the analyses did identify that people receiving re-ablement in the study showed improvements in dependency levels and outcomes between the start and end of the intervention period. Although without analysis of the comparison group at this stage we do not know whether people receiving usual care might also have improved, our expectation would be that the health and well-being of frail older people tends to decline. If this is the case, then we would infer that re-ablement is effective. However, it can be argued also that, six weeks after discharge from hospital or following a crisis point, people's health and dependency levels will tend to improve even without re-ablement support. Analysis of the long-term outcomes in the re-ablement group will be compared to those in the comparison group using traditional home care services only after the full follow-up period and will be described in the final report.

4.1 Costs of services

In this analysis we used 'opportunity costs' rather than money costs. Opportunity costs value the resources used for services not in terms of their market price but in terms of the value of the best alternative use of those resources. The costs received from the sites to date provide an early indication of the average cost per service user (£1,963), the cost per working hour (£21) and the cost per hour of service user contact (£41). The information shows a small range between the costs per working hour (£19 and £22 per hour) and the cost per hour of contact with service users ranges from £37 to £44 per hour. The average cost per service user for three of the four sites for which information has been received is around £2,000 with one of the services reporting a lower average cost per service user of £1,587.

As information has not yet been received from all the local authorities and equipment costs have not yet been collected, the information is still preliminary and subject to change. It is therefore too early to explore the differences in costs between those services with therapists embedded in their teams, those with direct access to other services and those which include only home care services. Similarly until all the costs have been received, cost comparisons with other services cannot be made.

4.2 Impact of re-ablement on dependency levels

Changes occurring over time in the whole cohort suggest short-term improvements in activities of daily living after receiving a re-ablement service in terms of having the ability to: get out of doors and walk down the road; wash face and hands; have a bath, shower or wash all over; get dressed and undressed; have control of the bladder. There was very little difference in FACS levels between pre- and post-intervention. This finding is not robust due to the high level of missing data. However, it may also be that a longer period than six weeks is required to show a difference in FACS levels.

At an individual level, there were improvements in FACS levels for 21 per cent of service users after receiving re-ablement services. In terms of activities of daily living, a proportion of service users gained the ability to perform each activity after they received the re-ablement service. The impact was substantial for becoming able to bath, shower or wash all over (21 per cent became able to perform this activity) and becoming able to get dressed or undressed (19 per cent became able to perform this activity). The final report will explore the longer-term impact of re-ablement and whether the changes were due to the intervention.

4.3 Impact of re-ablement on perceived health

Changes occurring over time in the whole cohort suggest a significant short-term improvement in perceived health after receiving re-ablement services. At an individual level around a third of service users reported that their health had improved after receiving re-ablement services. This outcome change can only be seen as a short-term improvement and we cannot conclude that the change was due to receiving the intervention. Comparisons in the final report between responses among participants in the comparison and re-ablement groups will indicate whether these changes are sustained and whether they are evident also in the comparison group.

Univariate analyses indicated a consistent pattern of factors having an impact on responses both at baseline and after the intervention. A better level of health at both time points was reported among females, among service users owning their own house and those living alone. Receiving practical support from someone not living in the same household was also associated with improved health. After receiving re-ablement, a better level of health was also associated with receiving practical help from someone living in another household and unsurprisingly being classified at the low FACS threshold.

The multivariate analysis provided us with an insight into the predictors of perceived health. Perceived health was significantly associated with older age, being female and having the ability to perform four activities (bath, shower or wash all over; dress or undress; get out of doors and walk down the road; and get up and down stairs or steps). After controlling for local authority effects, personal characteristics remained significant predictors of changes in perceived health over time. An interesting finding is that lower perceived health was associated with local authority R2. This result could be due to the fact that the structure of the re-ablement service in R2 was different to the other study sites, with the same care workers providing both re-ablement and traditional home care support. A smaller degree of change in perceived health between pre- and post-intervention was associated with the ability to perform activities of daily living, while a higher degree of change after receiving re-ablement services was associated with site R3. Site R3 is one of three sites which can access an occupational therapist very quickly if needed. Further details about the content of re-ablement services in each study site are given in Rabiee *et al.* (2009).

4.4 Impact of re-ablement on perceived quality of life

Consistent with perceived health, changes occurring over time in the whole cohort suggest a significant improvement in perceived quality of life after receiving re-ablement services. The positive impact of re-ablement services is evident when we explore whether individual service users reported that their quality of life had improved post-intervention. Around 50 per cent of the sample reported that their quality of life remained the same after receiving re-ablement services, although around a third had reported an improvement. On a less positive note, a smaller proportion (21 per cent) reported that their quality of life declined after receiving the re-ablement service.

The factors that impacted on pre- and post-intervention responses mirrored findings for perceived health. A better quality of life at both baseline and post-intervention was associated independently with being female, living alone and receiving practical help from someone living in another household. At post-intervention, a better quality of life was also associated with being classified at the low FACS threshold.

In the multivariate analysis, quality of life over time was associated with being older, having the ability to get out doors and walk down the road and having the ability to transfer from the bed to the chair. Local authority effects were not significant suggesting no significant difference in outcomes for people in different types of re-ablement service. Further analysis in the final report will explore whether the different types of re-ablement service (for example, enabler led service or therapy and enabler led service) had an impact on outcomes. A higher degree of change in perceived quality of life after receiving re-ablement services was associated with R3 or R5. This finding could possibly be explained by R3 having quick access to an occupational therapist and R5 having an occupational therapist on the team.

4.5 Impact of re-ablement on health-related quality of life

Receiving the re-ablement service had a significant impact on health–related quality of life among the whole sample. This finding was investigated further when we explored the separate domains at an individual level. After receiving re-ablement services, service users reported fewer problems in terms of mobility, self-care, usual activities, pain/discomfort, anxiety/depression and improvements in general health.

The univariate analyses indicated that pre- and post-intervention responses were influenced by a number of personal characteristics. A better level of health-related quality of life was associated with living alone, receiving practical help from someone living in another household and being classified at the low FACS threshold. After receiving the re-ablement service, service users reported a better quality of life if they owned their own home and they received practical help from someone living in the same household. Analysis in the final report will be able to explore whether improvements in quality of life are due to receiving the intervention or whether the change would have naturally occurred with the provision of traditional home care services only.

Again, the multivariate analysis indicated that health-related quality of life as measured by EQ-5D was not reliant on how services were being delivered locally. After controlling for local authority effects, all the personal characteristics remained significant predictors of health-related quality of life. Local authority R2 had a significant impact on predicting health-related quality of life. This result indicates that health-related quality of life was perhaps being influenced by the way services were being delivered in this locality or the type of service user that is typically being referred to the service. Further analysis in the final report will explore whether the different types of re-ablement service (for example, enabler led service or therapy and enabler led service) had an impact on health-related quality of life. A smaller degree of change between pre- and post-intervention was associated with being older. While a higher degree of improvement after receiving the intervention was associated with receiving the service in either R3 or R4. Both authorities have quick access to occupational therapists.

4.6 Impact of re-ablement on social care outcomes

A significant short-term impact on outcomes was evident when we looked at social care outcomes for the whole cohort. This significant impact was for the overall social care outcome measure and the individual domains. At an individual level, while the impact of re-ablement was more evident for certain domains than others, overall the results do indicate a positive short-term impact.

The univariate analyses indicated that pre- and post-intervention responses were influenced by a number of personal characteristics. At pre-intervention, higher social care outcomes were associated independently with being female, living alone and receiving practical help from someone outside the household. Post intervention, higher social care needs was associated with receiving practical help from someone outside the household.

The multivariate analyses indicated that social care outcomes were significantly different for local authority R2. As mentioned before, this result could have been by how the service was being delivered locally. After controlling for local authority effects, social care outcomes were significantly predicted by personal characteristics in terms of age and the ability to perform three activities of daily living (getting out of doors and walking down the road, being able to transfer from the bed to the chair and having the ability to have a bath, shower or wash all over). Further analysis in the final report will explore whether a service that focuses on improving activities of daily living would have an impact on social care outcomes. A smaller degree of change between pre- and post-intervention was associated with being older. A higher degree of improvement in social care outcomes between pre-and post-intervention was associated with receiving the service in site R3 which has quick access to occupational therapists. A smaller degree of improvement was associated with receiving services in site R2 reflecting perhaps how services are delivered in this locality.

4.7 Conclusions

In conclusion, people receiving re-ablement showed a significant short-term improvement in perceived health, quality of life and social care outcomes between the pre- and post-intervention time points. However, as the analyses in this report were not concentrating on comparing outcomes for both the re-ablement and comparison group, we cannot conclude definitively that the changes were due to the intervention provided. The question about whether changes in outcome over time can be attributed to receiving re-ablement services will be the focus of the final report. It would appear that having quick access to an occupational therapist may have a positive impact on outcomes, however further analysis is required. Further analysis will also required to explore in more detail whether a re-ablement service that focuses on improving activities of daily living could improve outcomes.

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Appendix A Study aims, design and methods

A.1 Overall aims and objectives

The study aims to:

1. Provide robust research evidence on the immediate and longer-term benefits of home care re-ablement, including:
   a. User-level benefits (improved independence, quality of life, mental well-being).
   b. Service-level benefits (reduced demand for services, less use of expensive services).
2. Identify the factors that affect the level and duration of benefits for service users of a period of re-ablement (e.g .features of the service; user group characteristics; type and level of services used after re-ablement).
3. Identify any impact on and savings in the use of social care and other services that can be set against the costs of re-ablement services.
4. Describe the content and the costs of home care re-ablement services.

Specific research questions are:

- What impact does a period of home care re-ablement have on:
  - User well-being, quality of life, independence.
  - Use of a range of statutory, voluntary and informal support services.
  - Wider outcomes (e.g. ability to continue living at home).
  - … in the shorter and longer terms?
- What characteristics of re-ablement service users and of re-ablement service interventions themselves appear to be associated with;
  - Improvements in user well-being, quality of life, independence.
  - Reductions in use of a range of statutory, voluntary and informal support services;.
  - Wider outcomes.
  - ... and with changes in these outcomes over time?
- What evidence is there that a period of re-ablement reduces the costs of subsequent service use (social care, NHS, voluntary sector, other) in both the shorter and longer terms; and to what extent do any savings outweigh the costs of the re-ablement intervention?
- What factors (see 2 above) are associated with maximum savings in subsequent service use?

The structure of the study design is summarised in Figure A.1 below.

A.2 Summary of the research design

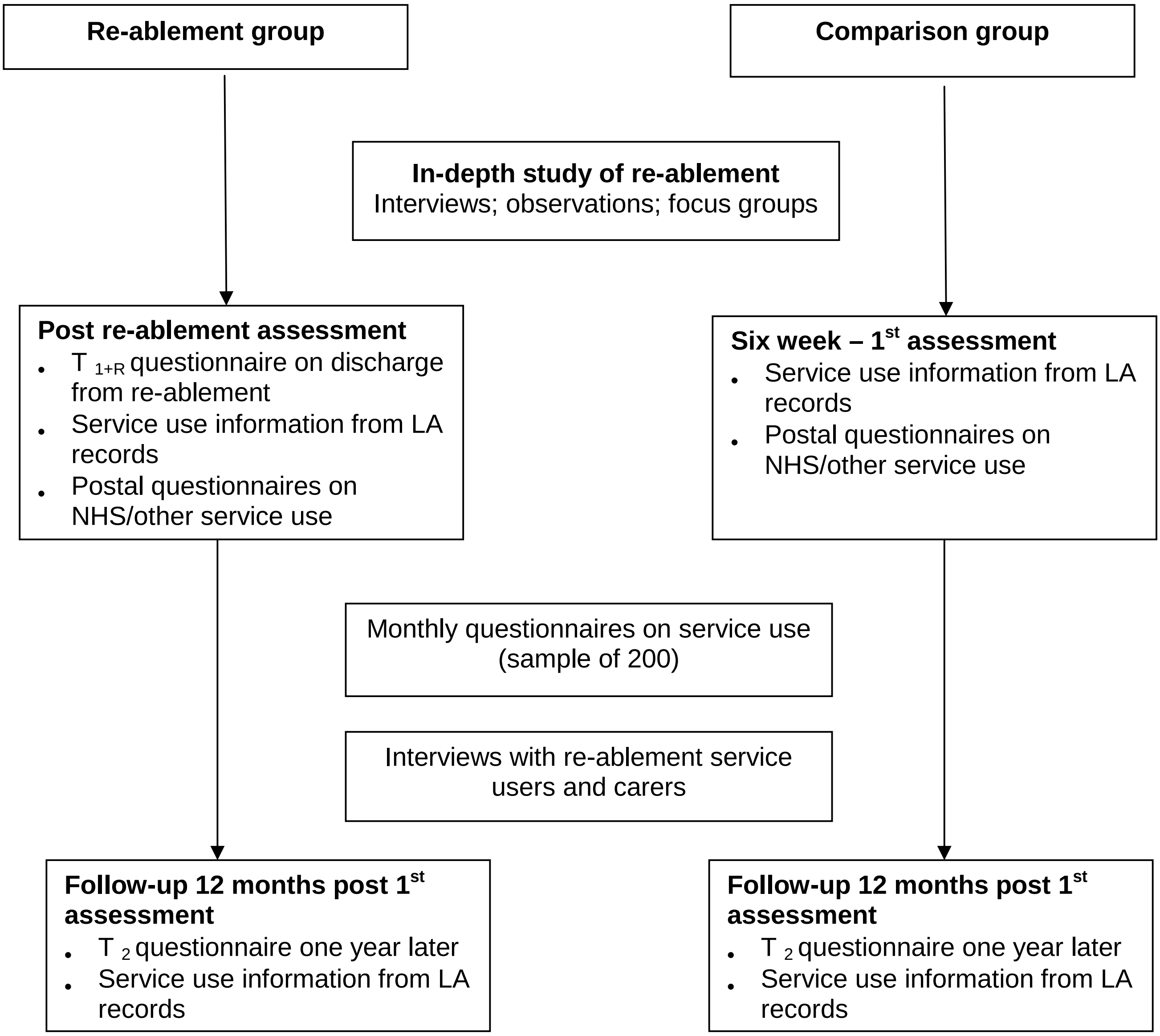
The research design aimed to generate data to facilitate a robust comparison of the impact and outcomes of the use of home care re-ablement services with conventional home care service use. A randomised design to assess the impact of the re-ablement intervention was not feasible given that, in any given local authority, **only** home care re-ablement or **only** standard home care services were likely to be available. A comparative design was therefore adopted. Study participants were recruited from five councils that offered home care re-ablement services and five comparison group sites where standard home care services were available. The study was designed to examine the length of the impact of service use. To that end, the same questionnaire, containing a number of standard outcome measures, was administered when a service user first entered the study at Time 1 (T1), and some 12 months later at Time 2 (T2). For re-ablement service users, the same questionnaire and outcome measures were also administered when the service user was ‘discharged’ or exited from the re-ablement service (T1+R). T.1 and T1+R data collection took place between November 2008 and September 2009; T.2 interviews began ten months later, in November 2009 (see below).

A significant component of the study was to collect information on the costs attributed to the re-ablement service. For each re-ablement site participating in the study, we have endeavoured to provide a bottom-up costing. This is an approach that identifies the different resources tied up in the delivery of the service and assigns a value for each of these resources. The sum of these values is the total cost. Unit costs are then calculated by linking these costs to different units of activity.

It is important to know how far the benefits of re-ablement extend to reduced use of NHS services and social care services. After eight weeks from the date of consent, a postal questionnaire was sent to each participant asking for information about health and social care service receipt. The data collection was supplemented by sending monthly questionnaires to a sub-sample of service uses to ascertain service use in the twelve months after the date of consent.

In addition, a range of qualitative methods was used to investigate the structure, operation and content of the home care re-ablement services in the respective study sites. Semi-structured interviews were conducted with each of the re-ablement service managers; observations of a sample of home visits to service users were carried out (with the consent of the workers and service users involved); and focus group discussions with samples of front line staff in each of the re-ablement local authorities were conducted to explore their perspectives on the themes and issues arising from the interviews and observations. For further details on these methods and associated findings, see Rabiee *et al*. (2009).

Figure A.1 Overall design of study



A.3 Selecting study sites

A ‘screening’ questionnaire was developed and e-mailed by CSED in April 2008 to all English local authorities with responsibilities for adult social care services. The purpose of the questionnaire was to establish whether or not councils met the following essential criteria for selection as a study site:

- ability to access management information (MI) data on service users electronically
- ability to link easily records of individuals’ current service with records of their past and subsequent service use

- willingness to work with the research team and to share outputs with other councils on a named basis
- availability of local resources (e.g. staffing) to undertake data collection
- in addition, data was collected on the Fair Access to Care Services (FACS) eligibility criteria currently operating in each local authority, and on the average monthly numbers of referrals to the council's re-ablement service/home care service.

Positive responses were received from 29 councils. Two individuals (a member of the research team and a CSED representative) assessed responses against the specified criteria. Some councils were eliminated at this point. Councils were also excluded if they had only very low numbers of referrals to their home care services, as it was anticipated this would make it difficult for them to achieve the appropriate level of recruitment to the study. Choices of comparison group sites were also restricted because many adult social care departments reported that they were currently planning or rolling out home care re-ablement services across the authority. Sites that were selected included councils operating different levels of FACS eligibility thresholds, so that the study could assess the longer-term impact of re-ablement on clients with greater and less severe levels of disability.

These sites were sent a detailed list of activities they would be involved in if selected; at least one of the 29 sites expressing an interest in the study then withdrew. The final selection at this initial stage of the study comprised five councils offering home care re-ablement services (two of which had teams that included occupational therapy staff as well as re-ablement workers); and four councils offering conventional home care services.

A series of 'site visits' was made to the nine councils by a CSED representative and two research team members. The visits explained in detail the respective roles and responsibilities of both the sites and the research team in terms of taking part in the study, recruiting service users and collecting data. Sites were offered financial reimbursement to cover administrative and other costs incurred through taking part in the study. One of the comparison group sites withdrew shortly after this initial site meeting. Although a replacement site was recruited, there were inevitable delays before the new site was in a position to start recruiting.

During September and October 2008, training workshops were held in all sites to ensure a consistent approach by front line staff to recruitment, obtaining informed consent from service users and collecting data (see below). The research team prepared a comprehensive guide for staff involved with the study: (a) to help them establish a service user's eligibility to take part in the study; (b) to provide them with step-by-step procedures when recruiting and administering questionnaires.

At the end of March 2009, one of the comparison group sites confirmed that it was no longer in a position to recruit any more participants to the study. The roll-out of that site's own re-ablement service meant that it was no longer appropriate for front-line staff who had now been trained in re-ablement practices to continue providing standard home care services.

Rates of recruitment were particularly low in the comparison group sites (see below) and efforts were made to recruit additional sites. One further council entered the study in May 2009 as a comparison group site for the final two months of the extended period of recruitment (June and July 2009). The final study therefore involved five re-ablement sites and five comparison group sites.

A.4 Recruitment of service users

The original study proposal focused only on older users of re-ablement and standard home care services. Given their frailty, this group of service users risked high attrition rates over time, between the T1 and T2 interviews. Consequently, the study aimed to recruit 1,600 service users (800 in each group) at T1, in the hope of achieving a final sample at T2 of 1,000 study participants (500 in each group).

Responses to the initial screening questionnaire that had been sent to all English councils had alerted the study team to the fact that some home care re-ablement services screened out some potential referrals as unsuitable for re-ablement, or lacked the capacity to offer a re-ablement approach to all new referrals. We therefore anticipated that the home care re-ablement sites would not be able to achieve as high levels of recruitment to the study as local authorities providing standard home care services. The five re-ablement sites were therefore asked to recruit 160 service users each; the (original) four comparison group sites were asked to recruit 200 service users each. The initial intention was for all sites to recruit service users to the study over a six month period, from October 2008 to March 2009 inclusive. In reality, however, sites were not in a position to start recruiting until November 2008.

On the whole, local authority social services staff who had taken part in the training workshops were responsible for recruiting service users to the study and administering the T1 (and T1+R in the re-ablement sites) questionnaires. However, one or two sites developed different procedures; for example in one site the council sub-contracted the local Age Concern organisation to administer the questionnaire.

Individuals were eligible to be invited to take part in the study if they met the following criteria:

- Were newly referred to adult social care services (or, for existing service users, if they had been referred for a review following a major change in circumstances and needs).
- Had been accepted as eligible for social care support under local FACS criteria.
- Were aged 65 years or older.
- Had the mental capacity to understand the research and consent to take part; this meant that service users with moderate or severe dementia or other cognitive impairments were not recruited to the study.

As noted above, all research sites were in a position to start actively recruiting study participants by early November 2008. A specially designed database was used to manage and monitor recruitment and record receipt of completed consent forms, T1 and T1+R questionnaires and the monthly service use questionnaires.

Initially, recruitment rates were quite low and soon it became clear that sites faced a number of difficulties recruiting service users to the study. In February and March 2009, following discussion with all the study sites, steps were taken to address these problems and boost recruitment rates:

- The age limit was lowered and recruitment extended to all adult service users (ie aged 18 and above) able to give informed consent.
- The recruitment period was extended by a further month to the end of April 2009.
- Incentives for staff were introduced, whereby a sum of money proportionate to the total number of study participants recruited by the site would be donated to a charity chosen by staff.
- Incentives for study participants were introduced, whereby £5 would be donated to a charity for each person recruited to the study. The total accumulated through these incentives was to be shared equally between three charities: Help the Aged; National Society for the Prevention of Cruelty to Children; Hearing Dogs for Deaf People. One of the sites chose not to take part in the incentive scheme for participants, as it was confident that it would achieve its target figure without this.

In addition, CSED emailed directors of adult services in the study sites to ask for their support in meeting target recruitment numbers.
Recruitment continued to be slow, however, particularly in the comparison group sites. In April 2009, again after discussion with the study sites, it was decided to take the following further measures:

- People who consented to take part from mid-April onwards were each offered a £10 grocery voucher on receipt of a completed T1 questionnaire. This replaced the £5 charity donation per study participant.
- Sites were offered the opportunity to conduct telephone interviews instead of face-to-face interviews.

- The period of recruitment was extended for a further three months to the end of July 2009.
- One additional comparison group site was recruited (see above).

A.5 Research ethics and reference group

NHS ethical approval for the study was obtained, as well as approval from the ADASS (Assistant Directors of Adult Social Services) Research Group. Research governance approval was obtained from individual local authorities taking part in the study.

The project is supported by a Reference Group, which has met twice to date (September 2008 and March 2009). Members comprise: academics; re-ablement service managers; and representatives from Care Services Efficiency Delivery (CSED), ADASS and an older people’s voluntary organisation.

A.6 Quantitative outcome measures

Study baseline (T.1) and post-intervention (T1+R) questionnaires contained the following outcome measures for all re-ablement and conventional home care service users:

Self Perceived Health
A person’s perception of his/her own health has been found to be a reliable predictor of functional decline (Ferraro, 1980), chronic disease (Shadbolt, 1997) and even mortality (Idler and Benyamini, 1997). The perceived health question was based on the five point scale suggested by Robine and colleagues (2003) as part of a European project on health indicators. This question asks respondents to rate their health in general according to five categories ranging from ‘very good’ to ‘very bad’. A lower score indicates better perceived health.

Perceived Quality of Life
The quality of life item was developed as part of a project funded under the ESRC Growing Older Research Programme (Bowling *et al*., 2002). This item was measured using a seven point scale, with categories ranging from ‘so good, it could not be better’ to ‘so bad, it could not be worse’ (Bowling, 1995). A lower score indicates better perceived quality of life.

Health-related quality of life (EQ-5D)
The Euro-QoL (EQ-5D) (Dolan et al., 1995) measure was used to explore the impact of service interventions on users’ reported changes in health related quality of life. There are three parts to this measure.

In the first, respondents are asked to indicate what level of difficulty they have in carrying out tasks in each of five ‘domains’; Mobility, Self-Care, Usual Activities, Pain/Discomfort and Anxiety/Depression. The levels of difficulty are: ‘no problems’, ‘some problems’ and ‘extreme problems/unable’. Service users’ responses are then ‘scored’ and the changes between pre and post-intervention assessed.

In the second part of the EQ-5D, respondents are asked to say how they feel their ‘health today’ compares to their ‘general health’ over the previous 12 months - whether it has got better, much the same, or worse. In the third part, they are asked to indicate how good or bad their heath state is on a ‘thermometer’ that runs from 0 (worst imaginable health state) to 100 (best imaginable health state).

Social care outcomes

The Adult Social Care Outcomes Toolkit (ASCOT) is a preference weighted indicator that reflects need for help and outcome gain from services across seven domains ranging from basic areas of need such as personal care and food and nutrition, to social participation and involvement and control over daily life (Netten et al., 2006). The questions ask respondents to choose, from a series of three deteriorating situations, which of the options best describes their situation. In this way, the questions aim to capture no needs, low level needs and high level needs in each domain. Table A.1 shows the responses actually used in the interview for each of the five domains.

Table A.1 Options provided for each ASCOT domain to reflect each need level

Domain	*Need level*	*Description*
Control	No	I have as much control over my daily life as I want
	Low	Sometimes I don't feel I have as much control over my daily
	High	I have no control over my daily life
Safety	No	I feel as safe as I want
	Low	Sometimes I do not feel as safe as I want
	High	I never feel as safe as I want
Personal care	No	I feel clean and wear what I want
	Low	I sometimes feel less clean than I want or sometimes can't wear what I want
	High	I feel much less clean than I want, with poor personal hygiene
Food and nutrition	No	I eat the meals I like when I want
	Low	I don't always eat the right meals I want, but I don't think there is a risk to my health
	High	I don't always eat the right meals I want, and I think there is a risk to my health
Social participation	No	My social situation and relationships are as good as I want
	Low	Sometimes I feel my social situation and relationships are not as good as I want
	High	I feel socially isolated and often feel lonely
Occupation	No	I do the activities I want to do
	Low	I do some of the activities I want to do
	High	I don't do any of the activities I want to do
Accommodation	No	My home is as clean and comfortable as I want
	Low	My home is less clean and comfortable than I want
	High	My home is not at all as clean or comfortable as I want
Caring role	No	I provide others with the kind of support that I want to provide
	Low	At times I find it difficult to provide others with the kind of support that I want to provide
	High	I am not able to provide others with the kind of support I want to provide
Level of worry and concern	No	I feel free from worry and concerns on a day-to-day basis
	Low	I sometimes feel worried and concerned
	High	I feel very worried and concerned on a daily basis
Dignity and respect	No	I am treated by other people with the dignity and respect that I want
	Low	Sometimes I am not treated by other people with the dignity and respect that I want
	High	I am never treated with the dignity and respect that I want

The current outcomes score is calculated by attaching importance weights (in number form) to the chosen level for each attribute and summing these numbers for all domains. The results of an earlier preference study (Burge *et al.*, 2006) provided importance weights for seven of the nine attributes (with dignity and anxiety un-matched). These weights were estimated using the Best-Worst approach (see Table

4.5, Burge *et al*., 2006). The Outcomes of Social Care for Adults (OSCA) project currently in progress is estimating preference weights and we used (unpublished) results from the preliminary study to infer weights for the remaining two attributes. All of these preference weights will be updated using the results of the QMF preference study when these are available.

Table A.2 gives the weights that we applied to each of the attributes. For example, if a person reported that their personal cleanliness was at a desired level then this would be scored at 3.3. In this way all nine attributes are weighted and summed for a total score. The maximum possible score is 28.10 and the minimum possible is -2.0.

Table A.2 Preference weights for attributes and levels

	Desired	*Adequate*	*Poor*
Home cleanliness and comfort	2.8	1.3	0.2
Safety	2.5	0.6	-0.2
Meals and nutrition	2.4	0.9	-0.3
Personal cleanliness	3.3	-0.1	-0.8
Activities/occupation	2.7	1.0	0.0
Control over daily life	3.7	1.5	-0.9
Social participation	3.0	1.3	-0.5
Anxiety	3.0	1.0	0.0
Dignity	1.9	0.5	0.0
Caring role	2.8	0.2	0.0

Psychological well-being

The psychological well being of service users was initially measured by the 12-item version of the General Health Questionnaire (Goldberg, 1992). This scale comprises 12 items that explore whether respondents have experienced a particular symptom or behaviour over the past few weeks. However, the scale was removed in January 2009 to reduce the time commitment for staff and service users and therefore has not been analysed.

A.7 Data on use of social care services

Slightly different methods were adopted for the re-ablement and comparison group sites to collect data on the social care services used by study participants.

Re-ablement group

At the beginning of each month, a list of the participant identification numbers of all completed post-intervention (T1+R) questionnaires received during the previous month was compiled. Each re-ablement site was asked to send details of all re-ablement and any other standard social care services received during the re-ablement period by each participant. Sites were asked to provide a description and the frequency of each service received (for example the hours of re-ablement home care received during the re-ablement period).

Comparison group sites

At the beginning of each month, a list of participant identification numbers was compiled for those participants who had consented to take part in the study and completed the T1 questionnaire approximately eight weeks previously. Each comparison site was asked to send details of all the social care services received during the first week of the previous month by each identified service user. This timing aimed to ensure that the data on services used during that specific week was likely to be a reasonably accurate reflection of the services received during the full eight week period. Again sites were asked to provide a description and frequency of each service received (for example, home care, meals on wheels, day care).

A.8 Statistical analyses

Univariate analysis

A chi-square test of association was used to explore the relationship between two discrete variables (for example, between the re-ablement and comparison groups on the dichotomous activities of daily living scales). When the outcome measure was based on a Likert scale (e.g. running from one to seven), a paired t-test was used to explore mean differences between the re-ablement and comparison groups (for example, quality of life, perceived health, health-related quality of life and social care outcomes). The McNemar test or Friedman test was used to explore whether there were significant differences between pre- and post-intervention.

Multivariate analysis

Each participant was assessed on two occasions (pre- and post-intervention) and therefore the observations form a hierarchical structure, with repeated measurements nested within participants. To be able to compare the stability of coefficients, the panel data analyses consisted of both a fixed effects model (xtreg, fe estimator) and random effects model (xtreg, re estimator).

In both models, the total variability of outcome scores explained by the predictors was estimated by R^2 overall. A regression specification error test (RESET) was carried out in a pooled regression model to explore the specification of each model

(Ramsey, 1969). The multivariate analyses were carried out using STATA version 10.

A.9 The impact of service user related variables on outcomes

Table A.3 lists all the variables that were used in the multivariate analysis when exploring what factors had an impact on outcomes for re-ablement service users.

Table A.3 Service user related variables tested for their impact on outcomes

Service user – related variables	*Re-ablement services*
Age	Services involved during re-ablement period
Gender	Days receiving re-ablement services
Level of need (FACS criteria)	Total hours receiving re-ablement services
Ethnicity	Reasons for referral to re-ablement services
Dependency levels	Local authority dummy codes
Get up and down stairs or steps	
Go out of doors and walk down the road	
Get around indoors (except steps)	
Get in and out of bed (or chair)	
Use WC/toilet	
Wash hands and face	
Bath, shower or wash all over	
Get dressed and undressed	
Grooming (i.e. washing own hair)	
Feed him/herself	
Control bladder or bowels	
Household composition	
Tenure	
Marital status	
Accommodation	
Receiving practical help from someone inside or outside of household	

Appendix B Profile of the re-ablement sites

B.1 Site R1

Re-ablement service profile		
1	Name of service	Community Response Service
2	Establishment of the service	2002/4: Pilot sites were established across all areas of the county, called First Response. This was an initiative within the in-house Home Care Service to provide a short-term rapid support service, predominately to older people being discharged from hospital, with the aim of promoting their independence, improving hospital discharge arrangements and reducing Delayed Transfers of Care. It was to form a foundation for change within the in-house home care service. 2004/07: Within a major transformation programme the whole of the in-house service gradually developed into a short-term assessment and re-ablement service, called Community Response focussing on crisis intervention and hospital discharge. 2008: The service moved to its new structure of four registered Area offices but is centrally managed to ensure strategic development, equity and consistency.
3	Operational structure of current service	There are four Area offices within the service. Each consists of : • A Registered Area Manager • Team Leaders in each area managing the day-to-day operational service; working within the care management process to undertake on-going assessments within the up-to-six week period of intervention; setting the goals and outcomes to be achieved; and undertaking the supervision and support of staff. • Community Response Assistants Level 2 (CRA2) are senior CRAs and support CRAs in complicated cases and also support the Team Leaders who work out-of-hours, particularly supporting discharges at weekends. • Community Response Assistants (CRA). Each team leader supervises CRAs in their district (each area being divided into three districts). There are no therapists within the re-ablement team.

4	Current service model	Currently, site R1 takes people for whom they think the service can make a difference. This includes identifying the right level of care to support service users who need on-going care packages; settling people at home after hospital discharges; trying to keep people out of long-term residential care; crisis intervention; and supporting people who are likely to have no further care needs after their intervention. Typically the service is for six weeks (can be extended to eight weeks if necessary). If the service user has on-going support needs, in most cases the team leader will commission a care package from an independent agency. However if the case is complex e.g. involving safeguarding then commissioning on-going support will be the responsibility of the care manager.
5	Eligibility criteria	The service is available to all adults requiring home care, aged 18 years and over. The service does not take people with learning difficulties as they are considered to need a long-term support package. The service supports predominantly older people with physical or dementia needs. It also offers support to younger people with newly diagnosed conditions such as MS, Parkinson's and motor neurone disease. The local FACS threshold is 'critical and substantial' risk.
6	Referral routes	The service takes referrals from hospital and community teams.
7	Skill mix and staff training	Team leaders have NVQ Level 4 in Care. All their staff have NVQ Level 2 in Care. Staff receive induction and training on re-ablement, on-going training on standard skills, dementia training and refresher courses (such as emergency aid, infection control, medication and falls). At the time of the interview, the team leaders had just started training on equipment. A number of CRAs have had training in how to do exercises with service users.
8	Current charging policy	People are charged for the service.
9	Joint funded/ managed with NHS partners	No

B.2 Site R2

Re-ablement service profile		
1	Name of service	Home Care Rapid Response Team
2	Establishment of the service	1997: The Home Care Rapid Response Team started as a project joint-funded for three years by health and social services and was based in the LA Home Care Service. 2000: the team merged with the Social Services Integrated Care project. 2002: The Rapid Response Team was merged with the Home Care Service and opened up to accept all referrals.
3	Operational structure of current service	The re-ablement service is comprised of two sections: Rapid Response (which does the assessments) and the provider side. There are 6 managers who do assessments. Within the providers, there are East and West teams. Each team consists of: • A line manager (responsible for planning care, managing staff, liaising with service users) • Leaders (supporting staff and setting up the packages of care) • Carers. There are no OTs and physios in the teams but they work closely with the therapy team and social workers.
4	Current service model	The aim of the service is to enable adults/older people to retain/regain their independence in order to facilitate early hospital discharge; prevent hospital admissions where medically safe to be treated at home; and reduce premature admission to long-term residential or nursing care. Re-ablement is offered within the home care service to service users identified as having the potential to become independent in at least one area of activity. The service provides support for six weeks (can be extended by two weeks, if necessary). The majority of referrals are of older people, an increasing number of whom may have dementia; a few people have mental health problems. If the service user needs on-going support, the care management teams are responsible for commissioning on-going support.

5	Eligibility criteria	The service is available to all adults requiring home care, aged 18 years and over. The local FACS threshold ‘critical and substantial’ risk.
6	Referral routes	The service accepts referrals from all routes. However, the majority of referrals to Rapid Response come from the hospital, GPs, Community Matrons, and only occasionally from the care management team.
7	Skill mix and staff training	All home carers are trained to provide re-ablement support.
8	Current charging policy	The service is free for the first two weeks. Clients are then charged according to their ability to pay.
9	Joint funded/ managed with NHS partners	No

B.3 Site R3

Re-ablement service profile		
1	Name of service	Homecare Assessment and Re-ablement Team (HART)
2	Service establishment	1999: Piloted for older people and adults with physical disabilities identified as having the potential for re-ablement, referred from the social care commissioning team. 2000: Pilot extended to include all people newly assessed (or re-assessed following a significant change in care needs) as needing home care support through an ‘intake’ team model.

3	Operational structure of current service	There are ten HART teams (five in each of the two geographically based areas – North and South). Each team includes: • Homecare Manager (overall responsibility for all cases, reviews and drawing up support plans for users needing on-going home care services on discharge from HART) • Senior Homecare Assistants (responsible for observing/monitoring Homecare Assistants, contributing to risk assessment work, supporting Homecare Assistants in more complex cases and assessing for minor adaptations) • Homecare Assistants • Clerical Support. The workload of homecare assistants is scheduled by a (F/T) Programme Arranger.
4	Current service model	HART has two main roles: assessment and re-ablement. All new referrals for homecare are referred to the HART team following a community care assessment by a care manager or from health via the Single Assessment Process. If there is no capacity within the team to support the service user, or if it is considered that they would not benefit from a short-term re-ablement intervention, they are referred straight to an independent sector home care provider. If the case is accepted by HART, the team provides support for up to six weeks (can be extended by one to two weeks if necessary). If the service user needs on-going care at the end of the period of re-ablement, the HART manager will commission home care from independent agencies.
5	Eligibility criteria	The HART service is available to all adults aged 18 and over assessed as needing home care support, including people with learning difficulties and older people with dementia. The only exception is when it is considered that a shor-term, re-ablement focused intervention would either be detrimental to the person or that the service user would not benefit from it in any way, e.g. somebody who is in the last stages of a terminal illness. The local FACS threshold is ‘critical, substantial and moderate’ risk. Currently about 80 per cent of their clients are older people.

6	Referral routes	Community referrals and hospital discharges
7	Skill mix and staff training	All Home Care Assistants have or are working towards NVQ Level 2 in Care and receive induction training on a set of core skills. They all receive on-going training such as client handling, personal safety, risk assessment, record keeping. In addition, HART had an initial re-ablement training programme over two days but this is no longer needed as new starters work alongside experienced staff to acquire the necessary skills. Staff also receive specific spot training as and when required. They also receive dementia training and attend Vista courses to support people with visual impairments. There are no OTs in the HART teams. Home care managers and senior home care assistants are trained to assess for minor aids and adaptations (such as trolleys, bath boards and perching stools) so that they can order such equipment as and when needed. Access to OTs for more complex cases is fast-tracked to the mainstream locality commissioning teams.
8	Current charging policy	The service is free for the first two days. Clients are then charged according to their ability to pay.
9	Joint funded/ managed with NHS partners	No

B.4 Site R4

Re-ablement service profile		
1	Name of service	START Service
2	Establishment of the service	2005: The START Service began as a pilot within the LA home care service delivering short-term re-ablement services, taking on all community referrals from one locality (out of four). 2007: The START Service became Intermediate Care at Home Service, an NHS service delivering both enablement and clinical intervention (including OTs and physiotherapists). 2008: The START Service opened up to accept all referrals. Currently the Rapid Response Service, which is a short-term Crisis Intervention Service delivering home care support for up to seven days with immediate effect, is part of the Intermediate Care at Home service.

3	Operational structure of current service	The Team Manager is responsible for the overall operational performance of the home care service, which includes START, long-term clients and extra care housing. There are seven teams, supporting Rapid Response and START clients; these include: • Managers (overseeing the whole service, supporting case management, risk management issues, line management of staff, supervision, performance observation of staff) • A scheduling team (allocating work to home care staff) • Senior care officers (overseeing cases, supervising staff, risk management) • Care officers (Rapid Responders) • Home care assistants
4	Current service model	The service is supporting individuals to regain their levels of independence and maximise their daily living skills. When there is no capacity to take on a referral, the referral will go back to the commissioning teams who will arrange care from independent providers. The START Service provides support for six weeks (extended by two weeks, if necessary). If the service user needs on-going support, the care management teams are responsible for commissioning the on-going support.
5	Eligibility criteria	The START Service is available to all people over 18 who are assessed as needing home care services (including people with mental health problems and dementia but excluding people with learning difficulties). The local FACS threshold is ‘critical and substantial’ risk.
6	Referral routes	Community referrals and hospital discharges
7	Skill mix and staff training	Currently, staff within the team are trained up to NVQ Level 3. All staff get all the basic homecare mandatory training (e.g. moving and handling training, hoist training, Mental Capacity Act, vulnerable adults and basic food hygiene), distance learning dementia training and a comprehensive two week induction programme to support enablement services. Staff receive limited mental health training.

		As part of the Intermediate Care at Home Service, the re-ablement service had direct access to a clinical team including OTs, physiotherapists and District Nurses. However, at the time of the interview the service was facing a real shortage in therapy services as the START Service had lost both its senior OTs and physiotherapists.
8	Charging policy	The service is provided free of charge.
9	Joint funded/ managed with NHS partners	Yes

B.5 Site R5

Re-ablement service profile		
1	Name of service	Homecare Assessment Re-ablement Team (HART)
2	Establishment of the service	2004: Enablement Discharge Service (WEDS) was established as a partnership between the in-house Homecare Service and the Hospital Trust. 2006: WEDS ran a pilot for people over 65, discharged from elderly care hospital wards to include an assessment function based upon existing models. 2007: Home Care Assessment and Re-ablement Teams (HART) were established with an assessment and re-ablement function and with a major expansion to include all referrals for people over 18 assessed as needing short-term homecare support.
3	Operational structure of current service	There are 30 HART teams (ten in each of three areas), including: • Registered managers (managing the organisers) • Organisers (line managing enablers, organising programmes/workloads, doing risk assessments and organising discharges) • Senior carers (taking on any complicated cases, doing quality assurance visits, supervising enablers) • Home care enablers • (P/T) community OTs, funded by social services and taking care of community referrals.

		Additional OTs are embedded in HART with different grades and funded by the Acute Hospital Trust, taking care of patients discharged from hospital.
4	Current service model	HART has two main roles: assessment and re-ablement. HART provides support for up to six weeks (can be extended for a week if necessary). If service users need on-going support, the HART manager will commission that from an independent agency.
5	Eligibility criteria	The HART service is available to all adults aged 18 and over who live in the local authority area. The only limiting factor is whether HART has the capacity to meet service users' needs, for example, people needing complex and/or continuing care packages. HART also excludes people in the last stages of a terminal illness who they consider would not benefit from short-term interventions. The local FACS threshold is 'critical and substantial' risk.
6	Referral routes	Community referrals and hospital discharges. The service takes referrals from care managers and occupational therapists
7	Skill mix and staff training	The majority of staff have an NVQ Level 2 qualification. All staff have had the standard training required for domiciliary care agencies. They all receive a half day induction and training on re-ablement. Nearly all staff have had medication training and they all undertake dementia training. Mental health training has not been part of re-ablement training. The staff also have condition -specific training. OTs are embedded in HART.
8	Charging policy	The service is provided free of charge for a period of six weeks, or longer if still providing re-ablement support. However, if the service users are just waiting for an independent provider to begin providing on-going care, they would be charged according to their ability to pay.
9	Joint funded/ managed with NHS partners	Yes

Appendix C Collection of data on the costs of home care re-ablement services

In mid-January 2009, a questionnaire was devised and sent to the sites in order to collect the costs of the service. The aim of this exercise was to calculate, for the first time the unit costs of home care re-ablement services.

The questionnaire requested detailed information on the staff (salaries and time) employed to work for the re-ablement service; and other information on training, travel, capital and other overhead expenditure.

The questionnaire requested the following details:

1) The number of local authority care staff and administrative and supervisory staff working for the service.
2) The type of professional, their full-time annual salary (excluding oncosts) and the hours per week or percentage time they work for the service.
3) The same details for other staff working in the team, but who are not employed by the local authority.
4) An estimate of the training budget and details of what this consists of.
5) A detailed description of the service's direct overheads (administration, management and running costs) and the costs.
6) A detailed breakdown of the service's indirect overheads (human resources, general management and finance functions).
7) The costs allocated for travel or the amount per visit.
8) Information on the number of offices in use by the service so that capital costs (building and land) could be estimated. If the capital costs were available, then they could be provided.

It was decided that although equipment costs are important, it was unlikely that the sites would have detailed knowledge of what equipment had been recommended for use and therefore this would be estimated later from questionnaires sent to service users following assessment. Where other data was not made available, it was, wherever possible, estimated on the basis of previous research. We indicate in the tables in Appendix D where data have been estimated and approved by the sites to ensure that all assumptions and calculations are appropriate. Salary oncosts (employers' national insurance plus an amount for employers' contribution to superannuation) were agreed with the sites.

Appendix D Summary of costs for each site

D.1 Site R1

R1's community re-ablement team consists of 251 FTE Community Response Assistants and 55 FTE management and supervisory staff. The team is spread over four registered offices covering a wide geographical region. Site R1's County Council operate a desk sharing and flexible working policy.

Table D.1 provides the detail costs for Site R1 for 2007/08 which have been uprated using the Personal Social Services inflators. The total cost of the service for 2008/09 was £7,499,000 and the total number of service users was 3,500. The cost per service user was £2,143. The average cost per hour of contact with service users was £39 and the average cost per total hours (direct and indirect) was £20.

Care staff costs were 61 per cent of total costs. Due to size and area, travel costs were at the higher end of the range (13 per cent of total costs). Direct overheads such as supervisory and management costs and the running costs amounted to 26 per cent of total costs. Capital costs have been estimated by PSSRU and based on the new build and land requirements of 27 local authority offices and were less than one per cent of total costs.

Table D.1 Home care re-ablement service – R1

	2007/08 and uprated to 2008/09
Salaries of community response assistants	£5,027,741
Less Income from Health	-£452,432
Overheads	
Direct	
Administrative and Management	£1,702,201
Transport	£945,318
Supplies and Purchases	£67,616
Premises	£3,644
Agency	£164,105
Capital overheads (based on 27 desks and estimated by PSSRU)	£9,655
Indirect overheads	£31,151
TOTAL COSTS	**£7,499,000**
Total number of hours for care staff	382,395
Total number of hours contact	191,197
Estimated caseload	3,500
Cost per hour	£20
Cost per contact hour	£39
Cost per service user	£2,143

D.2 Site R2

Costs not yet received.

D.3 Site R3

R3's team consists of 184 home care assistants on varying contracts and 22 supervisory and management staff. The total cost for the service for 2008/09 was £3,335,074 and the annual average cost per service user was £1,587 with a total of 2,102 service users (see Table D.2 below). The cost for all hours worked (direct and indirect) was £22 per hour and the cost per contact hour was £44. Care staff costs were 61 per cent of total costs, total overheads were 26 per cent of total costs (7 per cent indirect and 19 per cent indirect overheads). Travel costs were 13 per cent of total costs and capital costs have been estimated by PSSRU and based on the new build and land requirements of 25 local authority offices. They were less than one per cent of total costs.

Table D.2 Home care re-ablement service – R3

	2008/09
Care staff salaries	£1,732,772
Oncosts	£312,869
Overheads	
Total Management and Supervisory Costs	£537,361
Direct Service Management	£51,079
Uniforms	£14,931
Direct Office Expenses	£6,282
Other	£3,929
Travel budget	£421,206
Training Budget	£15,706
Capital overheads (estimated by PSSRU)	£8,939
Indirect overheads	
Department and Central and Support Services	£230,000
TOTAL COSTS	**£3,335,074**
Total number of hours worked	148,878
Total number of care hours	74,439
Yearly caseload	2,102
Cost per hour	£22
Cost per direct contact hour	£45
Cost per service user	£1,587

D.4 Site R4

R4’s team consists of 40 home care workers on varying contracts and six FTE management and supervisory staff. They support and work with people over the whole of the region. Total costs for 2008/09 were £922,950 and the total number of service users was 429 (see Table D.3 below). The average annual cost per service user was £2,151 and the cost per hour of contact was £41. The cost for all hours worked (direct and indirect) was £19. Care staff costs accounted for 61 per cent of total costs and overheads (direct and indirect) were 30 per cent of total costs. Travel costs were nine per cent of total costs. Capital costs (building and land) were estimated by PSSRU at £2,145 and were based on the cost of six local authority offices.

Table D.3 Home care re-ablement service – R4

	2008/09
Care Staff Salaries	£456,000
Oncosts	£105,411
Training	£1,150
Total Management and supervision costs	£178,452
Direct overheads	£9,551
Total indirect overheads	£87,200
Travel	£83,040
Capital overheads (based on 6 desks and estimated by PSSRU)	£2,145
TOTAL COSTS	**£922,949**
Total hours	49,100
Total contact hours	22,586
Number of service users	429
Cost per hour	£19
Cost per contact hour	£41
Cost per service user	£2,151

D.5 Site R5

R5’s team consists of 129 care staff (127 enablers working 21 hours), 21 home care organisers, and 17 senior carers. Also in the team employed by the local authority are two occupational therapists (one senior and one grade 5). They both work 35 hours. As well as the local authority staff, there are a further three occupational therapists (senior 1, senior 2 and a basic grade), a full time assistant practitioner, an OT assistant and a 0.13 WTE admin support. They share a local authority building with another team.

Total costs for the service for 2008/09 were £3,056,163 and the total number of service users were 1,514 (see Table D.4 below). The annual cost per service user was £2,019, the cost per hour was £22 and the cost per hour of contact was £37. Care staff costs were 62 per cent of total costs, travel costs were three per cent of total costs and capital costs were provided by Site R5 and accounted for less than one per cent of total costs. Total overheads (including travel) were 38 per cent of total costs (10 per cent indirect overheads and 28 per cent direct overheads).

Table D.4 Home care re-ablement service – R5

	2008/09
Salaries	£1,549,161
Oncosts	£343,025
Overheads	
Training	£8,000
Utilities	£11,002
Telephone	£863
Uniforms	£1,831
General Equipment, postage	£9,821
Third Party Costs (additional 0.5/ OT + Travel)	£20,000
Direct overheads for health care staff (Estimated by PSSRU)	£8,898
Supervision and Administration	£711,048
Indirect overheads	
Expenses Recharge	£168,200
Admin Recharge	£39,300
Corporate Recharge	£72,300
Indirect overheads for non Local Authority staff (Estimated by PSSRU)	£14,743
Travel	£94,372
Capital	£3,600
TOTAL COSTS	**£3,056,163**
Total number of hours worked	136,321
Total number of contact hours	82,042
Total number of service users	1,514
Cost per hour	*£22*
Cost per contact hour	£37
Cost per Caseload	£2,019