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Measuring Personal Social Services Outputs for National Accounts: Services for Older People

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PSSRU Discussion Paper 2267/3
January 2006

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Acknowledgements

We are very grateful to the older people who took part in the fieldwork, local authority staff who provided and co-ordinated data, Robin Darton for providing the analyses of the 1995 and 2005 care home admissions surveys, to Ann-Marie Muncer for her help in developing questions and coordinating links with local authorities, and to NOP for conducting the fieldwork. We are also grateful for the advice of members of the Atkinson Review team and the project advisory group throughout the work together with valuable comments from others including Paul Coeling of CSCI.

Executive Summary

1. There is increasing pressure to devise a means of reflecting the outputs of social care in ways that can be used to reflect changes in productivity and efficiency. This paper reports on work undertaken to develop a measure of Personal Social Services (PSS) output both for the purposes of National Accounts, following on the ONS review on the future development of government output, productivity and associated price indices and with the longer-term objective of improving measurement and understanding of PSS output and productivity in social care.

2. We briefly outline the approach being adopted, which has been described in more depth in previous papers (Netten et al 2005a; 2005b). We focus here on the core components of PSS outputs for older people reflected in the benefits accruing from care home and home care provision. The approach requires that we link activity, in terms of people helped by services, to the Capacity for Benefit from those services and the quality of service provision.

3. The domains of outcome identified for Capacity for Benefit are:

- Personal cleanliness and comfort
- Social participation and involvement
- Control over daily life
- Meals and nutrition
- Safety
- Accommodation cleanliness, order and accessibility
- Employment and occupation
- Role support (as a carer or parent)¹

¹ As the domain titles are also commonly used terms we capitalise them throughout the text.

In addition the approach requires that an allowance is made for the fact that people value living in their own home and would prefer not to live in a care home.

4. Data on Capacity for Benefit (CfB) from home care services was gathered as part of ongoing research with a sample 380 older home care service users. Seven of the domains of potential outcome were identified (excluding role support) and service users asked whether services helped them in these domains.

5. The most commonly reported domain addressed by services packages was, as we might expect, Personal comfort, closely followed by cleanliness and accessibility of Accommodation. The domains least frequently addressed were Social participation and Occupation. The domains addressed and levels of need were associated with the intensity of the home care package. Control over daily living and cleanliness of Accommodation were frequently cited as important outcomes.

6. Some inconsistencies in response raised concerns and a follow up study was conducted to check respondents' understanding of the questions. Overall it appeared that respondents were consistent and lack of effect of services reflected

some insensitivity in the measure and lack of real impact on people's lives. Partly due to this, it did not prove possible to separately measure the impact of meals services or day care, so estimates were based on packages of services received as a whole.

7. Capacity for Benefit (CfB) measures were derived for home care and showed the expected increase with number of hours received. A model using a count of problems in activities of daily living (ADL) and whether or not the service user lived alone was estimated to predict the CfB for care homes. One Equal weighted measure assumed all domains were of equal importance. Three measures were based on OPUS (Older Persons' Utility Scale) weights, which reflected the relative importance of five of the domains. The three measures assumed different relative weights for a key element of the index: Living in one's own home.

8. Data on admissions to care homes in 1995 and 2005 were used to estimate CfB changes over time. Estimates depend on the weighting used but they all show that there have been higher increases in CfB in personal care homes compared with nursing homes during that period². It was interesting to note that CfB for all homes in 2005 is equal to or exceeds that of nursing homes in 1995.

9. The derivation of a measure of home care quality based on the User Experience Survey measure of satisfaction was reported previously (Netten et al., 2005a) but included here for completeness.

10. Two measures of care home quality were derived based on care home standards: like the CfB measures one assumed that all domains were of equal importance and the other reflected OPUS weights. Using 2004/05 data estimates based on OPUS weights were found to be more sensitive to change in prices than the Equal weighted measure.

11. Activity data or estimates are available for the period 2000/01-2004/05. The number of care weeks provided, which we use as the activity basis for our index, fell by 4.3 per cent over the period. The number of care home weeks increased by 9.7 per cent but was more than offset by the reductions in *people*³ receiving home care, which reduced by 12.9 per cent.

12. Using the Equal weighted measure, overall PSS outputs for older people are estimated to have increased by 9.9 per cent over the five-year period. The level of care home output is estimated to have increased by 35 per cent. Increasing levels of CfB mean that much of the reduction in home care activity has been compensated for, but there is still estimated to be a 6.2 per cent reduction in outputs. When we include an adjustment to reflect the proportion of expenditure met through fees the net rate of growth in PSS outputs was higher at 13.3 per cent.

13. The overall increase in outputs using the OPUS measure and highest weight for Living at home is close to the Equal weighted measure: 9.4 per cent compared with 9.9 per cent. When the lowest weight is used for Living at home on the other hand, the overall increase in outputs over the period is estimated as 11.6 per cent.

14. A number of assumptions have had to be made throughout due to lack of data. The different trends in underlying activity meant that the results were particularly sensitive to changes in assumptions that affected the relative values of care home and home care outputs. Outputs and changes in these over time also showed some sensitivity to the relative weights put on the domains and level within domains. Other assumptions, such as the relative weights used to derive the care home quality measure, were less influential on estimated growth rates.

2 We use the term *personal care homes* for homes officially registered as 'Residential homes' prior to April 2002 and 'Care home only' thereafter. When we refer to *care homes* we include both these and homes registered to provide nursing care.

3 Number of hours of home care provided increased as more intensive services were provided to fewer people: average hours per week increased by 36 per

15. The aim of this stage of the work was to use currently available data and data that could be collected in the context of other ongoing research to investigate the applicability of the approach in practice. Inevitably there are major gaps and questions raised by the process but the results do provide us with some insight into how such an approach might be applied in practice. We have focused on applying the approach to services for older people and limited ourselves to the provision of care home placements and care packages with a home care component. The estimates must be regarded as provisional but provide us with a helpful starting point in the measurement of PSS outputs and productivity.

1

Background

There is increasing pressure to devise a means of reflecting the outputs of social care in ways that can be used to reflect changes in productivity and efficiency. Professor Sir Tony Atkinson led a review for the Office for National Statistics (ONS) on the future development of government output, productivity and associated price indices (Atkinson, 2005). The review followed Eurostat guidance that countries should be developing direct measures of government services that are individually consumed. As part of this review and with the longer-term objective of improving measurement and understanding of PSS output and productivity in social care, the Department of Health funded work to develop new measures of personal social services (PSS) output and productivity, reflecting best available practice. This paper reports on the results of this work.

An extensive search of the literature (Netten et al., 2005a) identified little theoretical discussion or empirical evidence in the field of measuring productivity and outputs of social care services. Most of the evidence was limited to evaluations of cost effectiveness of specific interventions or services for particular client groups. While valuable in their own right such studies do not address the central question of how to measure government output in social care services across client groups in a way that could be used to monitor changes in productivity over time.

The first stage of the work was to develop a theoretically based approach and to identify how it might be applied (at least to some extent) using existing sources of data. The second stage (which we report on here) is to illustrate the application of the approach for measuring for National Accounts purposes outputs and services for older people using routine statistical sources and drawing on data collected as part of a study conducted to inform the Formula Spending Share (Darton et al., 2005). We start by describing the overall approach to the welfare index and then in turn discuss the methodology and basis for estimating core components of this index: Capacity for Benefit and quality. In section 5 we illustrate the application of the approach to activity data in estimating outputs and changes in levels of output over time. Finally we discuss some of the issues raised by the application including the wider potential of the approach and data requirements if such an approach were to be used in the future for National Accounts.

2

The welfare index

We discuss the background to the approach developed in more detail in an earlier paper (Netten et al., 2005a). The aim is to develop an outcome-weighted index that reflects changes in what services are providing, the characteristics of those they are serving and quality of provision. We define the function and role of PSS in terms of the social production of welfare framework (SPOW). This puts the individual, their family and friends at the heart of the production of welfare process (Netten and Davies, 1990; Netten, 2001). This represents individuals and their immediate care networks as producing *commodities* such as meals and nutrition or social contact, from which they directly derive welfare or benefit.

The basis for the index is ‘people helped’ through PSS expenditure during the year. How much they have been helped will depend on the amount of the service received (e.g. number of weeks of care) and what has been facilitated or delivered in terms of commodities (such as personal comfort, meals and nutrition and so on).

The proposed index relates services to anticipated welfare gain:

$$W_t = \sum c_i q_i f_i S_{it} + \sum f_i S_{it} \delta H_{it} + \sum E_t \delta P$$

Where:

W_t is the overall level of welfare produced during period t

c_i is the Capacity for Benefit of people using service i given the commodities which the service affects and the degree to which users are reliant or dependent on that service

q_i is the quality of service i and represents both the degree to which the service is meeting the needs identified in c_i and process outcomes

S_{it} is the quantity of service i produced during period t

δH_{it} is the increase in human capital in terms of health or knowledge resulting from service i in period t

E_{jt} reflects the amount of equipment or adaptations delivered during period t

δP is the increase in individuals’ productivity resulting from equipments and/or adaptations

f_i an adjustment to reflect the contribution by service users in the form of fees and charges for service i.

This full output index is intended to reflect all elements of welfare gain from all activities during the current period but some activities provide particular challenges. These include contributions to human capital ($\sum_{it} \delta H_{it}$), such as health improvements and benefits resulting from information and advice, including that acquired during the assessment process. There are major challenges presented by the measurement of these benefits and how they are best included in the index but it is important to include them as they reflect important policy priorities. Equipment and adaptations increase the productivity of individuals in terms of producing their own welfare. We would expect this impact to be distributed over time so the term δP reflects the benefits over the period that the equipment and adaptations are being used discounted back to the period in which the expenditure occurred. In the previous formulation we also included the output of preventative services (output represented by discounted future health benefits) but National Accounting rules preclude the impact of preventative services so they have been excluded here.

For our purposes here we are focusing on the principal areas of current welfare gain from government funded social care interventions for older people: outputs directly associated with service provision in the current period. This is represented in the term $\sum_{it} c_i q_i f_i S_{it}$ in the above equation.

S_i reflects the volume of services in terms of numbers of people receiving a service package i during the year. This is based on service receipt as measured on a routine basis. Currently the main sources are RAP, PSS EX1 and HH1. We discuss in section 5 below how these data are used.

In order to weight routine activity measures to reflect output we need to know what services are doing for people. This is the function of the Capacity for Benefit (CfB) term (c_i). What services do is reflected in terms of domains of outcome and how much they do (in terms of reliance on services) with each service. Section 3 describes the domains identified as encompassing the impact of social care services and details the proposed levels for each domain. Ideally these would be weighted to reflect their relative value using population preferences in order to best reflect the welfare gain resulting from government expenditure on PSS.

Based on earlier work focusing on the key domains of outcome for older people (Netten et al., 2002) and subsequent consultations (Netten et al., 2005a, 2005b) the domains have been defined as:

- Personal cleanliness and comfort
 - The individual is personally clean and comfortable, presentable in appearance and is in bed or up at appropriate times of the day
- Social participation and involvement
 - The individual is content with their level of emotional support, general social contact and level of community participation
- Control over daily life
 - The individual can choose what to do and when to do it, having control over their daily life and activities
- Meals and nutrition
 - The individual has a nutritious, varied and culturally appropriate diet with meals at regular, timely intervals
- Safety
 - The individual feels safe and secure. We are taking concerns about safety to include fear of abuse, falling or other physical harm and fear of being attacked or robbed as social care interventions are put in place to address these issues
- Accommodation cleanliness, order and accessibility
 - The environment is clean and comfortable and is easy to get around

- Employment and occupation
 - The individual is sufficiently occupied in meaningful activities whether it be formal employment, unpaid work or leisure activities
- Role support (as a carer or parent)
 - The individual is able to care for their dependant(s) as much as they wish without becoming overburdened

Appendix A describes the proposed levels for each domain relevant to the CfB indicator in order to clarify further what the domains are intended to reflect.

In addition we need to allow for the fact that some care options result in people living in institutional settings and that for the most part people prefer to live in their own homes whenever possible. An important policy objective is to maintain people in their own home so we need to include another domain that reflects whether people are living in their own homes. In applying this in practice it is easier to identify when people are *not* living in their own homes rather than that services have succeeded in keeping people at home.

We know that in practice all the potential Capacity for Benefit will not be met by the services so we need to allow for the degree to which services are in practice meeting needs in each domain and delivering process outcomes such as dignity and continuity of service. Thus we include a term (q_i) to reflect the quality of services. Section 4 describes the quality measures derived for home care and care homes for older people.

The term f_i is included to follow the National Accounting principle that the measure of government expenditure should be based on net rather than gross spend (reflecting the government's contribution). As we describe in section 5 we base this on the proportion of expenditure met through charges to reduce the level of output by an equivalent amount.

We draw on data available about the use by older people of publicly funded home care services and care home services to demonstrate putting the approach into practice.

3

Estimating capacity for benefit for older people's services

Capacity for Benefit is the difference between the expected welfare state in the absence of an intervention and the welfare state that could be delivered by that intervention. In order to estimate this it is important to understand both what services are doing (in terms of domains addressed) and expected level of need in the absence of services.

A sample of older home care service users was drawn from 14 local authorities as part of an ongoing study to feed into the Formula Spending Share (Darton et al., 2005). In total 387 people were interviewed, selected to over represent those receiving more intensive packages of care. The same study collected information about a sample of new admissions to care homes in 16 authorities. Table 3.1 shows the demographics of these and table 3.2 the numbers receiving each type of service.

As we might expect older people using home care services were younger and less likely to be living alone than those people being admitted to care homes.

Table 3.1: Characteristics of older service users 2005

	Home care		Care home admissions	
	Number (N=384)	%	Number (N=813)	%
Age				
65-74	76	20	83	10
75-79	65	17	107	13
80-84	115	30	190	23
85-89	68	18	213	26
90+	59	15	230	28
Gender				
Male	102	27	232	29
Female	282	73	581	71
Household				
Living alone	250	65	459	73
Living with others	134	35	166	27

The home care sample was randomly selected by local authorities as in receipt of home care and aged 65 years or over. Table 3.2 shows that not all 384 respondents reported receiving home care in the past month. Of those that did, 367 knew the number of hours per week, with 35 per cent reporting 11 hours per week or more. About 60 per cent of those receiving home care only received that

service. The majority of the remainder received day care with a tiny minority (4 per cent) receiving meals, day and home care.

A set of additional questions was included to allow us to estimate the Capacity for Benefit from services. These asked in turn for each domain the degree to which the individual had any unmet needs, whether services helped the respondent in this area of his or her life, if so which services and what their expected level of need would be in the absence of the service (see A2 in appendix A for an example).

Table 3.2: Service receipt

	Number		%
	All cases responding (N=384)	Receiving service	
Home care			
Any	384	367	96
Low intensity (<11 hrs pw)	367	240	65
High intensity (11+ hrs pw)	367	127	35
Privately organised home care	381	108	28
Meals service	384	63	16
Day care ^a	384	92	24
Home care and meals	382	62	16
Home and day care	382	89	23
Home and day care and meals	382	15	4

a Includes lunch clubs

Domains of outcome addressed by home care packages

Tables 3.3 to 3.7 show the domains identified by home care service users as being addressed by their care package overall: low intensity home care, high intensity home care (over 10 hours per week), meals on wheels and day care (including lunch clubs and so on) and the level of need they felt they would have in the absence of service interventions. The most commonly reported domain addressed by services packages was, as we might expect, Personal comfort, closely followed by cleanliness and comfort of Accommodation. The domains least frequently addressed were Occupation and Social participation.

Of those that identified services helping them in any domain, high level needs in the absence of services were most commonly reported for Personal comfort and Accommodation for about a third of the sample in each instance.

Turning to individual services, clearly all those receiving meals on wheels and day care will also be receiving home care so some of their unmet need might also be addressed by other services. Nevertheless, the fact that the service was identified as helping in a domain gives us some insight into the role of the service from the perspective of service users. It is clear that intensive home care (table 3.5) is performing very different functions to less intensive home care (table 3.4). Unsurprisingly, high level needs in the absence of services were most frequently reported among those receiving intensive levels of home care. Perhaps it is surprising, however, that only about half of those receiving low intensity home care reported that they were being helped with personal care and that a fifth of those receiving meals on wheels did not identify the service as helping them in the field of Meals and nutrition (table 3.6).

One of the most widespread domains that all services affected was Control over daily life. Among those receiving day care this domain was reported almost as

frequently as Social participation (36 per cent compared with 37 per cent respectively), when Social participation and/or Occupation (30 per cent) might, a priori, have been assumed to be the main function of day care (see table 3.7).

The questions about what helped people included whether equipment was used to assist people to meet their own needs in these domains. Over a third (35 per cent) identified that equipment designed to help with daily living (as opposed to compensate for sensory impairment, for example) was used in at least one domain. The most commonly cited domain was Control over daily life with 72 people or 41 per cent of those who felt that they were helped in this domain identifying equipment designed to help with daily living. Equipment was also frequently identified as important for Safety (61 people, 37 per cent of those helped) and Personal comfort (49 people, 19 per cent of those helped). Including the impact of equipment poses a number of challenges in the measurement of PSS outputs, for which at present we have insufficient data, but it is clear that it is an important issue to be addressed in the future.

Table 3.3: Domains of outcome and levels of need when respondent identified that need was addressed by service package

Domain	Helped by services (N=384)		High needs (N=354)	Low needs (N=354)	No needs (N=354)
	N	%	%	%	%
Personal comfort	260	68	33	20	20
Social participation	103	27	12	10	7
Control	174	45	26	20	3
Meals	166	43	26	14	6
Safety	165	43	20	19	7
Accommodation	239	62	34	26	7
Occupation	64	17	7	7	3
Any	354	92	-	-	-

Table 3.4: Domains of outcome and levels of need when respondent receiving low intensity home care identified that need was addressed by that service

Domain	Receives low intensity home care (N=240)		High needs (N=240)	Low needs (N=240)	No needs (N=240)
	N	%	%	%	%
Personal comfort	122	51	18	13	19
Social participation	43	18	6	6	5
Control	80	33	12	19	1
Meals	43	18	8	8	2
Safety	30	13	5	3	3
Accommodation	109	45	16	23	6
Occupation	12	5	2	1	2

Table 3.5: Domains of outcome and levels of need addressed by high intensity home care

Domain	Receives high intensity home care (N=127)		High needs (N=127)	Low needs (N=127)	No needs (N=127)
	N	%	%	%	%
Personal comfort	103	81	48	21	11
Social participation	36	28	14	6	8
Control	67	53	42	9	2
Meals	66	52	37	9	6
Safety	34	27	16	6	3
Accommodation	69	54	37	12	5
Occupation	14	11	5	3	2

Table 3.6: Domains of outcome and levels of need addressed by meals-on-wheels

Domain	Receives meals-on-wheels (N=63)		High needs (N=63)	Low needs (N=63)	No needs (N=63)
	N	%	%	%	%
Personal comfort	2	3	3	0	0
Social participation	9	14	5	2	8
Control	22	35	22	13	0
Meals	50	79	40	27	12
Safety	4	6	2	3	2
Accommodation	4	6	3	3	0
Occupation	3	5	3	2	0

Table 3.7: Domains of outcome and levels of need addressed by day care⁴

Domain	Receives day care (N=92)		High needs (N=92)	Low needs (N=92)	No needs (N=92)
	N	%	%	%	%
Personal comfort	17	18	5	5	8
Social participation	34	37	15	15	7
Control	33	36	14	22	0
Meals	20	22	9	9	4
Safety	16	17	6	4	12
Accommodation	12	13	7	1	5
Occupation	30	33	16	14	3

⁴ Including lunch clubs as this is how services are categorised in RAP.

Consistency of response

In some instances people identified some services doing things we would not expect (such as home care helping keep people occupied) and did not identify services doing things we would expect. For example, less than a third using day care (including lunch clubs) identified the service as helping them in the area of Social participation and involvement. Not all respondents receiving meals on wheels identified the service as helping them in the area of Meals and nutrition.

As noted on the tables, in some instances although services were identified as helping in a domain no expected unmet needs were identified in the absence of services. In others inconsistent responses were received where higher needs were identified with the services in place than expected if the service were not present. These were a small minority of cases but they did raise questions:

- Did respondents assume that in the absence of that service other services or informal carers would substitute so we were not identifying expected need in the absence of services?
- Were they reporting what indeed was the case – i.e. services were having a minimal or negative impact?
- Did they just not understand the questions?

The first of these questions was of particular concern as if this was a common misunderstanding and also prevailed among those who were not apparently inconsistent then potentially we would be seriously underestimating Capacity for Benefit based on the data collected.

A short interview was conducted with a follow up sample of service users to investigate respondents’ understanding of the questions. The sample was selected to include a high proportion of instances where inconsistent responses had been received or services had not been reported to have any effect. Of 30 people selected from those who had agreed in their first interview to be contacted again, 23 agreed to be interviewed. All respondents were asked about their assumptions when identifying expected levels of need in the absence of services and the types of tasks home care workers carried out for them. Where relevant they were also asked to clarify:

- Inconsistent responses
- Why services were not having an impact where we could have expected them to
- Why an impact was reported but needs were not expected to be any different in the absence of services.

A few people who had not identified the service having an impact in any of the domains were selected but none of these were included in the final sample.

Table 3.8 shows the frequency with which respondents were assuming some substitution by others when reporting expected need levels in the absence of services⁵. The results of the follow up interviews suggested that even in this sample, where a high proportion of people had earlier reported no change or inconsistent results, most respondents were appearing to understand the question and reflect all needs in the absence of services. Even where they were assuming substitution by other services or carers the impact on expected need in the absence of the service was negligible, with only four instances where expected need would have been higher in any domain. The domain where there appeared to be most potential for error was Personal comfort but in practice it was Safety where most underestimation of unmet need was likely.

5 The question was not asked about Control over daily life where no expected impact difference or an inconsistent response was reported least frequently. A question on control to be used in the 2006 national User Experience Survey was tested instead.

Table 3.8: Understanding of respondents of expected unmet need in absence of services

Domain	Services help	Assumed others would substitute if no services	Revised expected unmet need
Personal comfort	16	6	1
Social participation	13	1	0
Meals	14	3	0
Safety	9	2	2
Accommodation	17	2	1
Occupation	7	3	0

N=23

For the most part people were able to explain why they had either not identified services as helping in an expected domain or had but then identified all their

needs would be met or there was no difference in needs in the absence of the service. These reasons related to the marginal impact of the service and lack of sensitivity of our levels of met need in the measure. For example:

It would be difficult to shower on my own because the shower is in a bath and I have difficulty getting in and out and I don't feel as safe without home care, but I would still have a shower.

I'm worried about walking and moving about but if the home care didn't come in my level of worry wouldn't get as bad as being extremely worried.

The home care girls help to prepare food when they can but they are not down to do it officially, and they sometimes fetch me some fish and chips. If they didn't help I would still be able to do nearly all my food.

In one or two instances where respondents did not identify services as having any effect in an expected domain it appeared that there was some confusion on the part of the respondent. However, for the most part a consistent picture emerged. Seven of the 23 respondents did not cite home care as helping them with personal care. In all of these cases services were focusing on cleaning the house (six of the seven) or collecting pensions and prescriptions. Service receipt was lower (an average of three hours compared with 16 hours per week for those citing personal care). As we identified above, in the main sample a high proportion of respondents identified that home care services helped in keeping the house clean when it had been thought that home care did not do this to any large extent. Of the 23 respondents 17 identified that the home care service did help them with cleaning the house beyond washing up and other tasks. Respondents also identified meals preparation (eight) washing up (11) shopping (11) laundry (five) and odd jobs (six). In one instance the home care worker took the older person out, confirming the plausibility of the service addressing the domain of Occupation.

Overall the evidence suggested that for the most part the questions were eliciting what was intended and we had got a consistent picture of what was happening in practice. As a result we could have some confidence in estimating Capacity for Benefit based on the responses.

Estimating and predicting Capacity for Benefit values

We turn now to estimating the index values for Capacity for Benefit (CfB). In the first instance we are omitting carer outcomes so are concerned with seven domains of outcome plus whether the individual is resident or not in their own home.

Home care packages

Initially we had hoped to be able to identify the marginal impact of services such as meals on wheels and day care so we could separate these out. However, it became clear that this marginal impact, if it could be estimated, would not be appropriate to apply to national statistics as the CfB for those receiving meals on wheels or day care as part of a package of care was unlikely to reflect the CfB for those receiving these services alone. In the subsequent discussion, therefore, when we identify the CfB for home care services this includes the benefit from other services in the care package (see table 3.2 above for the distribution of service receipt in our sample). We discuss below the implications of this for the output index.

Home care packages can and do address a range of different domains for individuals. Thus we need to use service user information on what it is the service is doing for them. As we identified above, C_{fB} is the difference between welfare in the absence of PSS funded care (based on the expected need state) and the best possible welfare state (based on the maximum achievable given current practice) for any domain that the service package is addressing. To estimate the value of Capacity for Benefit for a home care package (C_{fB_{hc}}), therefore, for each individual we take the maximum score for each domain where they specify the service helped them and deduct from this the score based on his or her expected level of need in the absence of the service.

Ideally in these scores we reflect the relative importance of the domains of outcome. In the absence of data on population preferences for all the domains we estimate C_{fB_{hc}} both *Equal weighted* (all domains and levels of need within domains are assumed to be of equal importance) and *OPUS weighted* (based on the Older Peoples’ Utility Scale (OPUS)). Appendix B provides a brief summary of the development of the OPUS index, which was designed to reflect the preferences of older people for key outcomes of social care. The OPUS weighted index was estimated in order to test the impact of including preference weights using the data we have at present on social care outcome preferences among older people (Netten et al., 2002).

In the Equal weighted index the maximum score (all needs met) in each domain is 1, low level needs score .5, and high needs 0. Thus the maximum possible Capacity for Benefit is 7 (high level needs to be met in all seven domains) and the minimum 0.

In order to enhance comparability the OPUS weighted index was estimated so that the maximum and minimum possible scores were also 7 and 0. OPUS included five of the domains (Personal comfort, Social participation, Control, Meals and nutrition and Safety) from previous work developing OPUS. We assumed that the remaining needs were of equivalent importance to Safety (the least important domain) and adjusted the weights so if all needs were met in each domain the score was 7. High needs for each domain were scored 0 and low needs were either based on their relative weights in OPUS or, for those domains not included in OPUS, were assumed half their maximum weight. The resulting weights are shown in table 3.9.

Table 3.9: OPUS based weights to reflect levels of welfare for each need state

	Welfare state weights		
	All needs met	Low needs	High needs
Personal comfort	1.898	0.890	0
Social participation and involvement	1.661	1.008	0
Control over daily life	1.068	0.949	0
Meals and nutrition	0.771	0.593	0
Safety	0.534	0.237	0
Accommodation	0.534	0.267	0
Employment and occupation	0.534	0.267	0

In table 3.10 we report the resulting estimated C_{fB_{hc}} for home care packages based on the HH1 groupings of home care hours. As we would expect C_{fB_{hc}} increases with number of hours. The gradient is slightly higher between groups for the OPUS weighted index. The lower overall score is due to the lower estimated C_{fB_{hc}} associated with less intensive services.

Table 3.10: Mean estimated CfB_{hc} of home care packages

Home care hours per week	N	Mean Equal weighted CfB_{hc} (sd)	Mean OPUS weighted CfB_{hc} (sd)
0-2	50	1.35 (1.30)	1.12 (1.26)
2-5	87	1.48 (1.16)	1.30 (1.22)
5-10	103	1.69 (1.32)	1.63 (1.40)
11+	127	2.83 (1.77)	2.90 (1.88)
All cases	367	1.99 (1.58)	1.92 (1.69)

Care homes

In order to estimate Capacity for Benefit for care homes (CfB_{ch}) we again need a maximum possible score and an expected score in the absence of the intervention. We assume that care homes can address all domains and have the capacity to meet all needs but we need to allow for the welfare loss associated with people not being cared for in their own home. For the Equal weighted CfB_{ch} the maximum score is 6 based on seven Equal weighted domains and deducting one to reflect that they are not living in their own home. For the OPUS weighted index the maximum score is 6.537 if we assume a weight equal to the low level domain for Living in own home (*Low OPUS CfB_{ch}*). If we assume that the Living at home weight is equivalent to the high weighted domain (Personal comfort) the maximum score is 5.591 (*High OPUS CfB_{ch}*). A mid-point estimate of the importance of Living at home (*Mid OPUS CfB_{ch}*) results in a maximum score of 6.027.

When estimating the expected score we do not have direct information about need states for the sample of older people being admitted to care homes, so we need to predict this from the home care sample. For this purpose the expected need state was based on expected needs in the absence of services where this information was available and current need state where services were not identified as having an impact. Deducting the score based on these values from the maximum resulted in the estimated Capacity for Benefit from a care home (CfB_{ch}) for each member of the home care sample.

As we might expect, for a proportion of this sample this process resulted in a negative score implying that need levels were such that, even with a perfect service meeting all needs, the welfare loss associated with not living in their own home would outweigh any potential benefit. As a result the mean Equal weighted, mid and high OPUS CfB_{ch} estimates for the home care sample were lower than the CfB_{hc} (1.76 compared with 1.99 and 1.57 or 1.13 compared with 1.92 respectively). However, if a relatively low weight is put on staying in one's own home the situation is reversed: the low OPUS CfB_{ch} score was 2.08 compared with 1.92.

The purpose of generating these estimates was to generate predicted CfB_{ch} so we could apply these to the sample of admissions. In order to make the most of the data we model the relationship based on factors we would expect to be associated with Capacity for Benefit that were available both for our home care sample and for our sample of admissions.

For an individual, Capacity for Benefit is fundamentally about need for services. Need for services depends on:

- *Functional impairment*: the degree to which the individual was able to perform activities of daily living (reflected through ADL measures).
- *Informal care*: reflecting the amount of help available from other sources (reflected through living with others and amount of help received).
- *Environmental factors* such as steps and stairs can profoundly affect the degree to which individuals can manage. We did not have much information about this but could include indicators of specialist accommodation.
- *Personal preferences* may affect at what point people identify need in domains such as Social participation, for example. We might expect such preferences to be associated with gender and ethnic origin among other factors.

As the dataset was not designed with this type of analysis in mind it is not perhaps surprising that the only factors found to be significantly associated with Cfb_{ch} were ADL based indicators and whether or not the individual lived alone. Table 3.11 shows the models that were used to predict Capacity for Benefit from care homes based on these variables.

Table 3.11: Models predicting Cfb for care home residents

	Equal weighted Cfb	OPUS weighted Cfb ^a
Constant	1.78***	1.20***
N of ADLs	0.52***	0.61***
N of ADLs squared	-0.04**	-0.04**
Living with others & ADL squared	0.01(ns)	0.01*
Living with others	-0.88**	-0.75**
R2	0.213	0.239
Adj R2	0.204	0.230
N	352	352

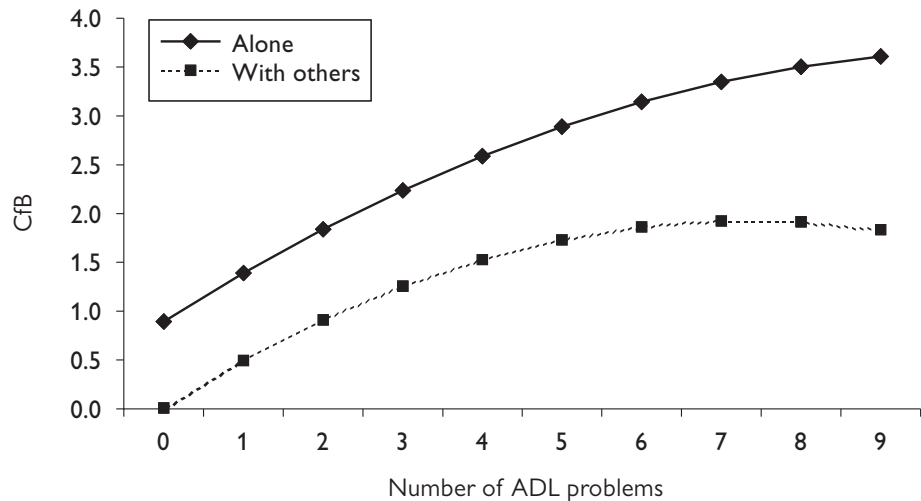
a Different assumptions about the importance of Living at home only affected the constant term so only the model based on the mid OPUS estimate is presented here.

*** p<.001; ** p<.01; * p<.1

Table 3.12 shows the predicted values from these models for each of the 18 groups based on number of ADLs where help is needed and whether or not the individual lives with others. Figure 3.1 depicts the relationship for the equal weighted measure. Although for the most part the model smoothed out predicted values when compared with simple mean values for these groups, at either end of

Table 3.12: Predicted Cfb by ADL count and whether living alone

ADL count	Equal weighted		Low OPUS		Mid OPUS		High OPUS	
	Alone	With others	Alone	With others	Alone	With others	Alone	With others
0	0.89	0.01	0.96	0.21	0.45	-0.30	0.01	-0.74
1	1.39	0.49	1.54	0.77	1.03	0.26	0.59	-0.17
2	1.84	0.91	2.06	1.25	1.55	0.74	1.11	0.31
3	2.24	1.25	2.53	1.66	2.02	1.15	1.59	0.71
4	2.59	1.53	2.95	1.98	2.44	1.47	2.01	1.03
5	2.89	1.73	3.32	2.22	2.81	1.71	2.37	1.27
6	3.14	1.86	3.63	2.38	3.12	1.87	2.68	1.43
7	3.35	1.92	3.89	2.45	3.38	1.94	2.94	1.51
8	3.50	1.91	4.09	2.45	3.58	1.94	3.15	1.50
9	3.61	1.83	4.25	2.36	3.74	1.85	3.30	1.42
Average	1.99	1.32	2.25	1.74	1.74	1.23	1.31	0.79

Figure 3.1: Predicted Equal-weighted Capacity for Benefit from care homes

the distribution there were some anomalies. For example, table 3.12 shows that CfB_{ch} values for those with nine ADL problems who were living with others prior to admission was slightly lower than the CfB values when there were eight problems.

One problem with predicting CfB for care home residents from home care service user information is that the groups are very different. Table 3.13 shows the distributions of home care service users and care home admissions. Of those people admitted to care homes, 20 per cent needed help in nine ADLs (the maximum number recorded) compared with just 5 per cent in the home care sample. This, together with the non-linear nature of the relationship, means that predictions for the highest levels of dependency may be underestimates of full CfB_{ch} .

Table 3.13: Number of ADL problems and living alone: home care service users and care home admissions in 2005

	Home care			Care home admissions		
	Alone % (N=231)	With others % (N=121)	All % (N=352)	Alone % (N=393)	With others % (N=151)	All % (N=544)
0	19	9	16	4	2	3
1	14	10	13	3	3	3
2	16	15	16	7	4	6
3	20	12	17	9	5	8
4	14	9	13	13	13	13
5	5	6	5	10	7	9
6	3	5	4	10	10	10
7	4	11	6	11	11	11
8	1	12	5	15	16	15
9	2	12	5	17	30	20

In order to estimate CfB for care homes we apply the predicted values to the proportions of residents that fall into each group. Ideally we would use data about publicly funded residents. We do not have information on current residents but do have data about 540 publicly funded admissions in 2005 and over 2000 admissions in 1995 (Bebbington et al., 2001). Over the 10-year period the levels

of impairment among people being admitted to a publicly funded care home place has increased considerably and a the proportion of people who lived alone prior to moving in to a care home has also increased. In personal care homes the proportion of people with eight or nine ADL problems nearly doubled: 23 per cent in 2005 compared with 12 per cent in 1995. In nursing homes the change was more marked in terms of living arrangements: the proportion of people admitted living on their own increased from 54 per cent in 1995 to 69 per cent in 2005.

Table 3.14 shows the estimated Cfb values for care homes based on the proportions of admissions that fall into each group (defined in terms of number of ADL problems and whether living alone). It is worth noting that the large number of groups means the number of people falling into each category is relatively small even for the larger sample in 1995. Nevertheless a consistent picture emerges demonstrating higher Capacity for Benefit in 2005 than in 1995, and in nursing homes compared with personal care homes.

Changes in levels of impairment on admission result in a larger increase in CfB_{ch} for personal care homes than nursing homes. Using the Equal weighted index and low OPUS estimate the increase in CfB_{ch} is about 14 per cent in personal care only homes compared with 10 per cent in nursing homes. For the OPUS weighted index including a high weighting for living in own home the difference is even more marked: 22 compared with 13 per cent. Overall increases in CfB_{ch} are estimated as 11 and 10 per cent for Equal weighted and low OPUS respectively and 16 per cent for high OPUS. It is interesting to note that for all estimates, CfB_{ch} for all homes in 2005 is equal to or exceeds that of nursing homes in 1995.

Table 3.14: Capacity for Benefit among admissions to care homes

		Personal care homes	Nursing homes	All care homes
Equal weighted	1995	2.15	2.49	2.29
	2005	2.45	2.74	2.55
	% change	14%	10%	11%
Low OPUS	1995	2.53	3.00	2.72
	2005	2.88	3.26	3.00
	% change	14%	9%	10%
Mid OPUS	1995	2.02	2.49	2.21
	2005	2.37	2.75	2.49
	% change	18%	11%	13%
High OPUS	1995	1.58	2.05	1.77
	2005	1.93	2.32	2.06
	% change	22%	13%	16%

Including carer outcomes

The reason that measured Capacity for Benefit is lower among people who live with others is that in such circumstances the care network tends to provide more help and services rather less. Although the approaches to estimating Cfb described here reflect (or attempt to reflect) the welfare gain accruing to the service user from PSS activity, potentially there are gains for carers that are currently excluded. Moreover, it could be argued that the exclusion of the Cfb for carers results in biased estimates as co-resident carers would be expected to experience the benefits of service provision most. There is evidence from research

that carers benefit from mainstream services provided to service users in addition to those services that are provided primarily for carers (Hirst, 2005). An important factor associated with admission to care homes is carer stress (Warburton, 1994) so an ongoing outcome is a reduction in this stress. Moreover, as described below, our measure of care home provision includes temporary placements, much of which is for respite care.

Unfortunately we have no direct evidence to draw on about the outcomes for carers in terms of Capacity for Benefit although the literature would suggest that Control over daily life, Social participation and involvement and Employment and occupation would be important domains (Hirst, 2005). In addition we have incorporated in the CfB overall measure a domain to reflect the impact of support in the caring role. We do not have data to draw on to identify when this or other potential areas of benefit are experienced but can hypothesise that the difference between Capacity for Benefit between those that live alone and those that live with others is due to unmeasured inputs from carers and that admission to a care home results in benefits to these carers.

4

Quality

Once we have established the potential for output home care-based packages and for care homes, we need to identify the quality of what is delivered in practice. As we identify in section 2 above, ideally this reflects both the degree to which needs are met and service process.

The approach to measuring quality needs to be:

- practical in terms of not too burdensome in terms of data collection
- sufficiently frequent to reflect change
- reasonably robust in reflecting quality changes.

In order to make the best use of existing sources of data we adopted different approaches for home care and care homes.

Home care

For home care of older people a good source is the three yearly user experience survey (UES). This provides at a national level information on older home care users' overall satisfaction with social services received at home. In 2003 information was collected from 87,000 services users in all local authorities in England using detailed guidance on sampling procedures and conduct of the survey (Department of Health, 2003a). The Best Value Performance indicator based on this question (per cent extremely or very satisfied) has a confidence interval of +/-0.3 per cent (Department of Health, 2003a).

More detailed information about quality of home care in 34 authorities is available from an extension to the UES survey conducted by PSSRU (Netten et al., 2004) that it is planned to repeat in 2006. This study investigated and confirmed the validity of the best value indicator based on the satisfaction measure. Appendix C (taken from the first report of this work (Netten et al., 2005a)) describes an analysis of the data from that study in order to weight the satisfaction item to reflect the relative quality of service user experience. Table 4.1 below shows the quality weights based on the best solution in that it reflects all the statistically significant different levels of satisfaction in terms of quality.

Table 4.1: Quality of home care services

Level of satisfaction	Quality weights (2)	% Older service users	Level of service quality
Extremely	1	25.02	.250
Very	.668	32.47	.217
Quite	.426	31.37	.133
Neutral/dissatisfied	.279	11.14	.031
Total	n/a	100	.632

Note: Figures do not add exactly due to rounding.

On this basis the quality weight would be .632. If ‘extremely’ and ‘very’ levels of satisfaction were combined as they are in the Best Value performance indicator the quality weight would be .781.

Although there was some evidence of lower levels of satisfaction amongst those receiving more intense services (Netten et al., 2004) this accounted for a very small proportion of the variation in reported quality. Further work would be needed to separate out the impact of impairment on people’s expressed satisfaction before we could be confident that this reflected genuine differences in quality. For the present we include the same weight for those receiving intensive and low level home care but will reconsider if future analyses suggest this is advisable.

Although the weighting is derived primarily from questions asking about the home care service, the general satisfaction question asks about all services delivered in the home to people who are receiving home care, so is directly applicable to the CfB_{hc} measure described in section 3. It is interesting to note, however, that in a recent study where satisfaction with meals services was asked separately, there were much lower levels of satisfaction with meals than with services in the home overall (Jones et al., 2005).

Care homes

As we identified above, the pragmatic approach we are adopting is to draw on existing sources of information as far as possible. Since 2002 the regulator (currently the Commission for Social Care Improvement (CSCI)) has had the responsibility for inspecting homes biannually and reporting annually on whether homes are meeting National Minimum Standards (Department of Health, 2001a). In any new system of regulation there are inevitably concerns about the consistency of inspector judgements, potentially both between inspectors and over time. However, the use of standards at least provides us with a common starting point, using data at a national level means that the large number of observations helps to minimise the impact of individual variation, and a core objective for any regulating body will be to address problems of consistency and reliability. Moreover, an important element of guidance to inspectors is that it is expected that the experiences of service users will be central to inspections.

We discuss the implications of the current review of the regulatory system in section 6 below. Here we focus on the use of existing data under the current regime.

Mapping standards on to domains

In total there are 38 care standards for care homes for older people, 20 of which were identified as ‘key standards’ by CSCI as they relate to the welfare, health, safety and protection of service users (See Appendix D). Since April 2005 inspectors must assess for these standards during each inspection year. They have the optional flexibility to inspect to additional standards if they feel it is necessary.

For the most part the key standards map very well on to our domains of outcome (see Table 4.2). The domains that are least well covered are Personal comfort, which we are assuming is encompassed under a catch-all heading of health care and, surprisingly, Accommodation. While accommodation cleanliness is covered there are no clear standards that relate to the accessibility of the building for residents. We have drawn on a non-key standard that actually refers to specialist equipment as this refers to ‘maximising independence’, which we are taking to include getting around their environment. It does not appear that there is any

Table 4.2: Linking care home standards for older people to domains of outcome for the measurement of PSS outputs

Domain	Standard	Comment
Personal comfort	8 Service users' health care needs are fully met	This standard is more about access to health care services but includes 8.1, "to maintain personal and oral hygiene and support users capacity for self care".
Social participation and involvement	13 Service users maintain contact with family/ friends/ representatives and the local community as they wish	Virtually same domain although does not seem to cover social contact within the home
Control over daily life	14 Service users are helped to exercise choice and control over their lives	Exactly the domain required
Meals and nutrition	15 Service users receive a wholesome appealing balanced diet in pleasing surroundings at times convenient to them	Exactly the domain required
Safety	18 Service users are protected from abuse	The domain really is about whether people feel safe rather than are protected but reasonable to assume an association.
Safety	19 Service users live in a safe, well-maintained environment	Again, not about feeling safe but this reflects the environmental aspect of safety
Accommodation	22* Service users have the specialist equipment they require to maximise their independence.	Assumed to reflect access aspect of accommodation..
Accommodation	26 The home is clean, pleasant and hygienic	Cleanliness and comfort aspect of accommodation
Employment and occupation	12 Services users find the lifestyle experienced in the home matches their expectations and preferences, and satisfies their social, cultural, religious and recreational interests and needs	Slightly broader than domain but encompasses aspects of process quality we would want to reflect
Across all domains	10 Service users feel they are treated with respect and their right to privacy	Process quality indicator –interacts with other domains in the quality measure

* Not a key standard.

standard that will pick up on improvements in accommodation that have occurred in recent years such as the provision of en-suite facilities.

Of the remaining domains, the Safety domain is inherently difficult as what we really want to pick up on is whether people feel safe and secure rather than inspectors' judgements about protection and the general environment. However, it is reasonable to assume that there is an association between feelings of safety and inspectors judgements that residents are safe.

An important aspect of the measurement of quality is to reflect the care process. To some extent we would expect aspects of process to be reflected in the standards themselves. For example, in addition to an adequate diet, Meals and nutrition standard 15 includes 'in pleasing surroundings at times convenient' to the residents. In terms of overall process quality we use Standard 10, which identifies that residents and their right to privacy are treated with respect.

Table D.3 in Appendix D links the standards for care homes for younger adults to the domains of outcome. In this instance Personal comfort appears to be very well covered by the domain. Again, the accessibility of Accommodation is least well addressed.

Constructing the measure

In order to create a quality measure we need to sum the standards, reflecting the degree to which they have been met. Standards are reported at four levels:

- Exceeded
- Met
- Almost met
- Not met

A measure based on a simple division between meeting and not meeting standards (so just doing a count of those standards that have been met) would not reflect relative quality as the difference between ‘almost met’ and ‘met’ may lie in a technicality which has relatively little impact on residents’ lives. We need a weighting to reflect the degree to which the needs in each domain are met and the quality of the care process. In the absence of data reflecting the actual variation in quality and how it relates to judgements made by inspectors we must make initial estimates based on face validity. Table 4.3 shows the base weights we have used for each standard for these initial estimates.⁶ Once a standard has been met we allow a higher score if the home has also met the process standard reflecting respecting residents’ privacy and dignity.

Where more than one standard fed into one domain the weighting was adjusted so each domain was weighted equally for our ‘Equal weighted’ quality measure. We then used the OPUS based quality weights to reflect the relative importance of each of the seven domains.

6 We discuss in section 5 below the implications of varying these weights.

Table 4.3: Weighting standards

Inspector judgement	Privacy and dignity (Standard 10)	Base weight
Exceeded	Met	1
	Not met	.9
Met	Met	.6
	Not met	.5
Almost met		.3
Not met		.1

Using data provided by CSCI we estimated the national quality scores for 2002/03, 2003/04 and 2004/05 (see table 4.4). Given the assumptions above about weighting inspectors’ judgements of how well the standards were met, the absolute levels in 2004/05 were .546 for the Equal weighted quality measure and .514 for the OPUS weighted measure. Changes in reported standards resulted in an estimated improvement in quality between 2002/03 and 2004/05 of about 4 per cent per annum (Equal weighted measure) or 3 per cent (OPUS weighted

Table 4.4: Quality of care homes for older people 2002-2005

Type of home	Average quality score			% change
	2002/03	2003/04	2004/05	02/03-04/05
Equal weighted quality				
Personal care only	0.510	0.546	0.551	8.0
Nursing	0.502	0.529	0.535	6.6
All care homes	0.507 (sd=.112)	0.541 (sd=.103)	0.546 (sd=.099)	7.7
OPUS weighted quality				
Personal care only	0.487	0.516	0.519	6.6
Nursing	0.479	0.500	0.505	5.4
All care homes	0.484 (sd=.104)	0.511 (sd=.094)	0.514 (sd=.091)	6.2

measure). In practice most of the quality improvement was demonstrated between 2002/03 and 2003/04. The results also suggest that nursing homes provide slightly lower quality social care than residential homes ($p < .05$) and have been improving at a lower rate.⁷

7 As we are measuring social care outputs this excludes the quality of health care provision by nursing homes as this is separately funded.

Table 4.5 shows the quality indicators for 2004/05 by home sector. The results suggest that voluntary homes provided higher quality care than local authority or private homes ($p < .001$). This pattern was consistent across all three years. Local authority homes appeared slightly higher on average than private homes but this difference was not statistically significant in 2004/05. However, it is interesting to note that the difference was statistically significant ($p < .001$) in 2002/03.

Table 4.5: Equal weighted and OPUS weighted quality scores by type of home 2004/05

Type of home	Quality score (Equal weights)	Quality score (OPUS weights)
Local Authority	.546	.514
Private	.542	.511
Voluntary	.576	.536

At present we do not have any independent basis for validating the approach used. It is interesting to note however, that an analysis of the relationship between prices and quality using this measure found a stronger association with the OPUS weighted indicator than that based on the Equal weighted indicator (Forder, 2005).

The fact that we have used key standards for the most part means that it is possible, as long as these standards are in place, to reflect how quality has changed over time, as these will continue to be reported from 2005 on. The one exception is standard 22, which is not a key standard so will not reliably be reported on in the future. In this instance we could assume that homes continue at the same level that met the standard before 2005 would continue to do so unless subsequent reports identified a change. Newly registered homes would be assumed to meet the standard.

5

Estimated outputs of services for older people

In order to measure overall levels of output we combine information about levels of activity adjusted to reflect Capacity for Benefit and quality.

Activity

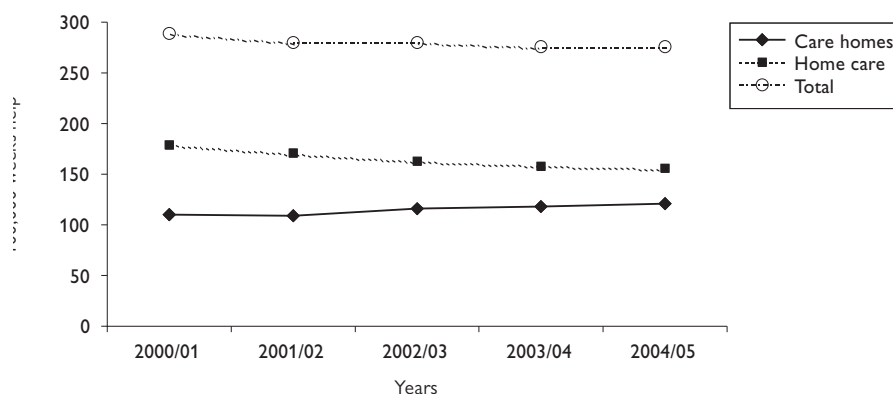
As we described above, the basis for the index is people helped. We represent this through the number of weeks' care provided either in care homes or in service users' own homes. For our present purposes we are including the impact of other services (such as meals and day care) provided to people who are receiving home care so we just use care home and home care activity data.

Data on care homes are drawn from PSS EX1 and include all weeks paid for during the year including temporary stays. Data from HH1 are used for home care to reflect the distribution of hours provided and we apply this to the number of people (rather than households) receiving home care. HH1 provides a census of all home care users in a particular week halfway through the financial year, so includes younger age groups. To adjust this to reflect provision for older people we use RAP data to identify the proportion of people who receive home care who are 65 or older.⁸ We know that this is approximate: RAP figures on numbers receiving home care at the end of the financial year do not correspond well with HH1 data and the distribution of hours is likely to be rather different for younger groups than for older people. Nevertheless, this provides us a reasonable basis for estimating activity. In order to convert this to the equivalent of care homes weeks we multiply the number of people receiving home care by 52.14.

HH1 data are available for 2000/01 to 2004/05. PSS EX1 and RAP data are only available up to 2003/04 but 2004/05 should be available in the near future. For our purposes here we estimate number of care home weeks for 2004/05 on the basis of the same rate of increase between the previous two financial years and the same proportion of older people receiving home care in 2003/04.

While there was an increase in the total number of home care hours over the period of about 20 per cent, there was a reduction of 12.9 per cent in the number of people receiving home care. As a result, average hours per week increased by 36 per cent (from 6.73 to 9.16 hours per week). As described above, we use the number of people receiving home care in our measure. The number of care home weeks increased by 9.7 per cent over the period, an increase that reflects in part the transfer of responsibility for preserved rights residents to local authorities. This increase was more than offset by the fall in the number of home care weeks, with the overall number of care weeks provided falling by 4.3 per cent over the period (see Figure 5.1).

⁸ There has been a slight reduction in the proportion of people receiving home care who are over 65 between 2000/01 and 2003/04: from 83 per cent to 81 per cent.

Figure 5.1: Changing levels of activity over time

Estimated measures of and changes in output

Table 5.1 brings together our Equal weighted estimates of Capacity for Benefit with activity and quality data. For care homes we assume that CfB_{ch} has increased at a constant rate between 1995 and 2005. For home care we reflect changing CfB_{hc} data by matching the proportion of home care users in each HH1 group to average CfB_{hc} in that group. We are unable yet to reflect changes in home care quality as there are no data. For care homes we assume the rate of change in quality prior to 2002/03 equal to that thereafter.

Table 5.1: Estimating PSS output older people (Equal weighted)

	2000/01	2001/02	2002/03	2003/04	2004/05	% change
Res care home weeks (100,000s)	74.78	74.16	79.05	80.98	82.95	10.9
CfB_{ch}	2.30	2.34	2.38	2.41	2.45	6.6
Quality	0.469	0.490	0.510	0.546	0.551	17.5
Nursing home weeks (100,000s)	35.06	34.73	37.25	37.41	37.58	7.2
CfB_{ch}	2.62	2.65	2.68	2.71	2.74	4.8
Quality	0.469	0.486	0.502	0.529	0.535	14.1
Care home outputs (100,000s)	124	130	146	160	167	35.2
Home care weeks (100,000s)	178.93	170.84	163.37	157.99	155.83	-12.9
CfB_{hc}	1.71	1.75	1.78	1.81	1.85	7.8
Quality	0.632	0.632	0.632	0.632	0.632	0.0
Home care outputs (100,000s)	194	189	184	181	182	-6.2
Total gross PSS outputs (100,000s)	317.65	318.28	329.83	341.08	349.21	9.9
Total net PSS outputs (100,000s)	243.51	242.47	253.25	270.08	275.87	13.3

Figure 5.2 shows the resulting estimated levels of output. The impact of changing levels of dependency means that the level of care home output is estimated to have increased by 35 per cent. Increasing levels of CfB_{hc} mean that much of the reduction in home care activity has been compensated for, nevertheless there is still estimated to be a 6.2 per cent reduction in outputs. Overall PSS outputs for older people are estimated to have increased by 9.9 per cent over the five-year period. When we include an adjustment to reflect the proportion of expenditure met through fees the net rate of growth in PSS outputs (13.3 per cent) has been rather higher than the gross rate of growth.

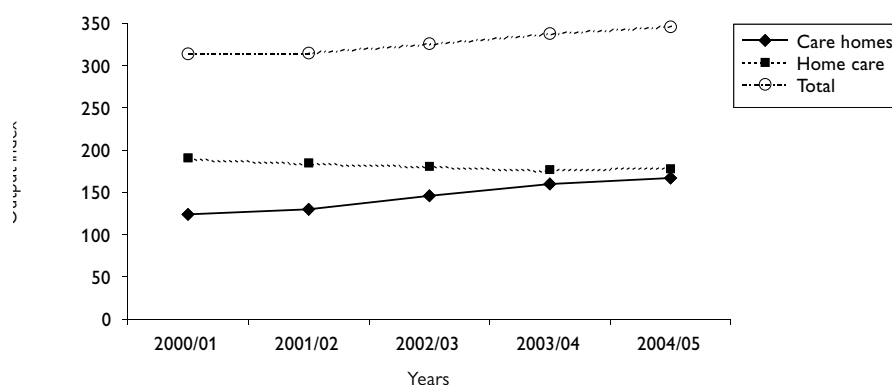
Figure 5.2: Care home and home care package outputs


Table 5.2 shows the results of using OPUS weighted measures on estimated outputs. Larger increases in estimated CfB using OPUS weights results in a lower reduction in home care outputs: 4.1 per cent. Care home outputs depend on whether we use a high or low weight to reflect the impact of people not living in

Table 5.2: Estimating PSS output (OPUS weighted)

	Living at home weight	2000/01	2001/02	2002/03	2003/04	2004/05	% change
Res care home weeks (100,000s)		74.78	74.16	79.05	80.98	82.95	10.9
CfB _{ch}	Low	2.70	2.75	2.79	2.83	2.88	6.5
	Mid	2.19	2.24	2.28	2.32	2.37	8.0
	High	1.76	1.80	1.84	1.89	1.93	10.0
Quality		0.455	0.471	0.487	0.516	0.519	13.9
Nursing home weeks (100,000s)		35.06	34.73	37.25	37.41	37.58	7.2
CfB _{ch}	Low	3.13	3.16	3.20	3.23	3.26	4.2
	Mid	2.62	2.65	2.69	2.72	2.75	5.0
	High	2.18	2.22	2.25	2.28	2.32	6.0
Quality		0.453	0.466	0.479	0.500	0.505	11.3
Care home outputs (100,000s)	Low	142	147	164	179	186	31.0
	Mid	116.18	121.02	135.69	147.97	154.18	32.5
	High	94	99	111	122	127	34.5
Home care weeks (100,000s)		178.93	170.84	163.37	157.99	155.83	-12.9
CfB _{hc}		1.56	1.60	1.64	1.67	1.72	10.1
Quality		0.632	0.632	0.632	0.632	0.632	0.0
Home care outputs (100,000s)		176	173	169	167	169	-4.1
Total gross PSS outputs (100,000s)	Low	317.89	319.63	333.47	345.64	354.82	11.5
	Mid	292.44	293.56	304.74	314.79	323.18	10.4
	High	270.68	271.28	280.17	288.42	296.14	9.3
Total net PSS outputs (100,000s)	Low	239.20	239.25	252.11	270.13	276.81	15.7
	Mid	223.64	223.27	233.82	249.27	255.42	14.2
	High	210.33	209.60	218.18	231.43	237.13	12.7

their own homes. By definition if we assume that the population put a high weight on living in their own home the overall level of output from care homes is lower. In terms of change over time, the higher weight results in a higher level of increase in care home outputs: 34.5 per cent compared with 31.0 per cent when the lowest weight is used. When home care and care home outputs are combined the overall increase in outputs using the highest weight for Living at home is closest to the Equal weighted measure: 9.3 per cent compared with 9.9 per cent. If the lowest weight is used for Living at home on the other hand, the overall increase in outputs over the period is estimated as 11.3 per cent. The reason for this is that when a high weight is given to Living at home the lower level of output from care homes means that the decreasing levels of output from home care have more of an impact on the overall total. Again, net rates of increase are higher: ranging from 12.7 per cent for OPUS weighted high for Living at home outputs to 15.7 per cent for OPUS using the lowest weight for Living at home.

Sensitivity of estimates to assumptions

Inevitably we have had to make a substantial number of assumptions in order to generate these estimates. Assumptions have had to be made in all three areas of the output measure: activity, Capacity for Benefit and quality.

Activity

The main assumptions about activity can be replaced by data when they become available:

- Numbers of care home placements in 2004/05.
- National income and expenditure data 2004/05 for estimating the proportion of activity that was publicly funded.

The remaining activity assumptions are based on the best available data. These include:

- The distribution of all service users receiving home care in terms of number of hours reflects older service users receipt of this service.
- Cross-sectional measures in terms of numbers of service users at specific points in time can be multiplied by number of weeks to approximate the total number of weeks care provided.

The sensitivity of results to such assumptions are less of a concern than the more innovative aspects of the approach in measuring PSS output. Central to this is the measurement of Capacity for Benefit.

Capacity for Benefit

In the absence of any direct information about CfB_{ch} from residents of care homes we have had to estimate predicted levels based on home care service users and apply these to admissions to care homes. It is reasonable to assume that these are underestimates, given the very different dependency profile and likely circumstances in terms of unmet need of the two groups. On a very simplistic basis if we simply assume that actual CfB_{ch} values are double our estimates overall growth rates increase: the Equal weighted output growth rate is 17 per cent over the period, compared with our base estimate of just 9.9 per cent (see table 5.4). However, the assumption is quite extreme and does affect the largest component of PSS output.

An important limitation to the CfB estimates is the omission of any outcomes for carers. It is very difficult to identify sensible assumptions on which to base any

sensitivity analysis as there is little information about what the relative value of these outcomes may be and where they would be generated. If we simply assume that the difference in predicted CfB_{ch} for care homes is due to unmeasured benefits to carers (as they no longer have to provide the input) our estimates of growth are slightly lower: Equal weighted outputs increase by 9.2 compared with 9.9 per cent over the period. However, this difference is primarily due to an increase in the proportion of people admitted to care homes that live alone and totally fails to reflect the reduction in welfare associated with separating married couples and other carers who would prefer to continue. Neither does it reflect the considerable benefit that can be incurred by carers from mainstream home care provision.

Theoretically we would want the CfB measure to reflect the relative importance of the domains of outcome. In the absence of these data a variety of approaches have been used and the impact in terms of predicted growth rates compared:

- Equal weighting of domains and levels of need within domains
- Using the previously derived OPUS weights as a basis for preference weights
- Varying assumptions about the relative importance to older people of Living at home.

The results suggested that growth rates were sensitive to the assumptions made, particularly with respect to the relative weight of Living at home. This is primarily due to the fact that the relative importance of the growth in care home activity over the period is affected by the absolute weight put on this activity relative to home care.

Quality

Turning to the assumptions necessary for measuring quality, as with Activity some assumptions can be replaced by data that should be available in the near future. Home care quality was assumed static over the period for the reasons discussed above but data will be available in mid 2006, which will allow us to review that assumption and replace with actual changes in quality.

Care home quality was assumed to improve at the same rate prior to the first year standards were introduced as they had after that date. We feel this was a reasonable assumption as the discussions prior to the introduction of the standards had an observable impact on care homes behaviour (Netten et al., 2005c). If we assume quality was static prior to 2002/03 average growth rates are lower: Equal weighted estimates reduce from 9.9 per cent to just 6.6 per cent.

In the absence of any data we have had to assume indicative weights for inspectors' judgements on care standards when deriving the care home quality measure. There are two issues raised by this: the validity of the relative scoring for each standard and the resulting absolute value and how it compares with the weight derived for home care quality.

In order to test whether the results are sensitive to changes in the weights given to whether care standards were not met, nearly met, met or exceeded we compared the results using relative high and low weights compared with our base assumption (see table D4 in Appendix D for the levels used). Comparing the most extreme assumptions, changes in quality of care over the three-year period varied by at most 2 per cent. The difference in the value of the quality measure meant that there was a small difference in overall growth, but again this was limited: using the equal weighted measure the difference was less than 1 per cent (10.5 per cent using the highest weights compared with 9.4 per cent using the

lowest weights). The results were similar using the OPUS weighted quality measure (see table 5.3).

The basis for the measurement of quality in home care and care homes is very different and the assumptions and internal logic of the measures has resulted in apparently higher quality of care for home care than in care homes. However, we have no basis for such an assertion and a more equitable approach might be to assume that at a given point in time quality of care in the two sectors was equivalent and then measure change from that date. If we assume that the measure of home care quality in 2002/03 is a reasonable starting point we can scale up the quality of residential care but incorporate the rate of growth reflected in changing standards. On this basis there is a higher estimated rate of growth: Table 5.3 shows that using the equal weighted measures it increases from 9.9 per cent to 12.1 per cent over the period.

Table 5.3: Comparative gross growth rates under different assumptions

	Base estimates %	Double $C_{B_{ch}}$ estimates %	High weights	Low weights	Quality of home care and care homes equivalent in 2003/04 %
Equal weighted domains	9.9	16.9	10.5	9.4	12.1
Low OPUS	11.5	17.5	12.1	11.4	13.4
Mid OPUS	10.4	16.7	11.2	10.1	12.3
High OPUS	9.3	15.8	10.4	8.8	11.2

6

Conclusions and next steps

The aim of this stage of the work was to use currently available data and data that could be collected in the context of other ongoing research to investigate the applicability of the approach in practice. Inevitably there are major gaps and questions raised by the process but the results do provide us with some insight into how such an approach might be applied in practice. We have focused on applying the approach to services for older people and limited ourselves to the provision of care home placements and care packages with a home care component. The estimates must be regarded as provisional as we have needed to make a number of assumptions in the absence of data. Nevertheless, the process and estimates provide us with an indication of the type of results we might expect. Here we briefly discuss issues that have arisen in the course of developing these estimates and implications for future developments.

Services

In section 2 we describe the different approaches needed for services that perform different roles in the production of welfare and identified particular challenges presented by equipment services and those providing advice and information. We focused here on the core services currently provided for older people and have covered the majority of service expenditure.

There were some concerns about the consistency of RAP and HH1 estimates for home care and that, even were we able to derive marginal Capacity for Benefit for day care and meals, it would not be straightforward to apply these to the way that service receipt is currently reported. If service provision patterns were expected to remain as they are now the logical way forward would be to conduct service specific studies and to recommend ways of recording data in the future in a way that could be used to monitor service outputs. In practice, however, there are major changes planned and we need an approach that will best reflect the impact of such changes, including increasing numbers of people using Direct Payments and innovations such as Individual Budgets.

For National Accounts purposes, guidance from ONS is that Direct Payments should be treated as transfer payments, provided that recipients are not restricted in what they purchase. Thus they would not be included in our measure of output. However, for wider purposes in measuring outputs and productivity we would want to include the value of output of Direct Payments as in policy terms one of the objectives is to enhance productivity of expenditure by allowing people to maximise their utility directly by putting together their own care packages.

In terms of the approach, inclusion of Direct Payments and Individual Budgets do not provide any conceptual problems, as receipt could be treated like any other

service package, distinguishing between intensive and less intensive support. However, in terms of data it is clear that we need a source of information about what Direct Payments (and eventually Individual Budgets) are delivering in terms both of CfB and quality before they could be included.

Capacity for benefit

The results of the home care study and associated follow-up interviews suggested that there was some insensitivity in the measure (which is not surprising, given the limited number of levels within each domain) and that services were providing rather more in the form of Accommodation cleanliness and rather less in terms of Personal care than we might have expected. This suggests that we need to be cautious in generalising across to other client groups.

Generally the measure appeared to work well but we need to be aware that there will be some sources of inaccuracy beyond those we have discussed above. For example, where people are receiving low-level service packages and have identified these services as addressing high level needs in domains such as Occupation and Social participation and involvement. We have estimated Capacity for Benefit on the basis of the service meeting all needs in identified domains regardless of the level of provision. In practice we could not expect low level services to meet high level needs as there simply is not enough service input. We could hypothesise that they could only be reduced to low level needs but in practice where do we draw the line in making such adjustments?

For residents of care homes we have used predicted values on admissions data. This is close to what we want to identify but ideally we would use actual values on cross-sectional data. The values of CfB for care homes are low: for example the predicted CfB for all care home residents in 2005 is 2.55 compared with 1.85 for home care service users on a scale that at least theoretically runs from 0-7. The estimates of total output and change in output proved sensitive to the absolute values of CfB for care homes, which is not surprising as this is the sector where there has been most recorded growth in activity over the period.⁹ In terms of change of CfB_{ch} for care homes over time the measure appears to reflect change well: the estimate that CfB_{ch} in all care homes in 2005 is similar to the level of CfB_{ch} in nursing homes in 1995, chiming with what we might expect given recent trends in policy and practice.

Our hope had been that we could get good enough predictions based on measures of activity of daily living and other indicators that we might find in routine data collections to regularly update estimates of Capacity for Benefit. Although measures of dependency clearly were related to CfB it is not clear that there are good sources of information. There is a dearth of intensive home care cases in the GHS and a lack of information about residents of care homes generally. For home care HH1 provides us with an estimate based on service receipt that could be validated on an interim basis. We are planning an extension study to the 2006 User Experience Survey that will include some ADL indicators that may help us in this respect and could be potentially included nationally if it were felt important to do so. For care homes, one way forward would be to require some form of data as part of the regulatory process that is currently under review (see below). However, any bids for additional data to be required from providers would need to fit in with CSCI's methodological developments and broader government objectives about reducing the administrative burden on businesses.

⁹ As we note above, some of this growth is due to changes in local authority funding responsibilities rather than increases in numbers of people being cared for.

Quality

By necessity we have had to assume constant quality in home care but have had an interim indicator of rising quality in care homes. This may be reasonable as we might expect homes to respond to the introduction of standards and in home care all the indications that we are aware of were likely to lead to lower rather than higher quality over the period. The measure of quality used for home care is based on a weighted general measure of satisfaction. Those factors found to be associated with lower satisfaction: for example provision by independent providers and more intensive care packages, have increased between 2000/01 and 2004/05.

Younger adults responding to the same question in their UES revealed a very different profile of responses (expressing higher levels of dissatisfaction) (Department of Health, 2005). This raises both the issue of comparing satisfaction across client groups and, more widely, the role of expectation in expressing satisfaction. As cohorts move through, particularly the older population, ideally we will need to adjust our measure to reflect changing expectations. An alternative is to match the satisfaction indicator more closely with what the care package is intended to achieve (see the section on output measures below).

As we describe in section 4, for care homes the key standards match the domains of outcome very well. However, one concern is that the standards, indeed the whole legislative framework for regulation, are currently under review. The Department of Health are reviewing the content of the regulations and frequency of inspection. CSCI is independently reviewing the inspection methodology, including the approach to scoring. Indeed, even in 2005/06 there has been a shift to scoring against the outcome statements rather than the specific standards.

If the approach proposed here is to be used in the longer term it will be important that standards, procedures and reporting arrangements continue to provide adequate data. It is hoped that the potential wider value of data from the regulatory process will be fed into the review and influence future developments. Future work is planned with the objective of linking observed quality to judgements about standards and developing an approach to measuring quality based on recorded data under the post-review regime. This should address the validity of the weights used in our preliminary approach described here, although it was interesting to note that changes in quality and overall growth rates were not very sensitive to changes in assumptions about these weights.

The initial results suggest that incorporating the OPUS weights, which provide us with an indication of the effect of including population preferences, results in a more sensitive measure of quality that is more directly related to prices. However, it is interesting to note that overall quality appears to be lower using the OPUS weights.

This raises a more general problem with the approach used to measuring quality: the measures are not directly comparable across different modes of care as the basis of the judgement is the subjective service user perspective for home care and more objective regulator perspective for residential based care. On the basis of the approaches described in section 4, the quality of home care is assumed to be higher than care homes (.632 compared with .546 or .514 depending which measure is used). Is this a reasonable assumption? We are not aware of any work on the comparable quality of care homes and home care. In the absence of any such data can we make an explicit value judgement about the weights used in estimating quality for care homes? For example, if all care homes in the country met the outcome-based standards specified (but none exceeded them) and residents were treated with dignity and their privacy respected our current weighting implies a value of .6 or 60% of the best quality possible. Does this seem a reasonable assumption?

One possible way forward is to assume that quality was equivalent in a base year for which information is available (2002/03) and then reflect comparative change in each care mode, rather than use the absolute levels provided here. We demonstrated above the implication of standardising quality to one year, the results of which again reflect the issue of the sensitivity to growth assumptions about the relative values of care home and home care outputs.

In the longer term we could consider alternative approaches that combine regulator and user views as has been attempted elsewhere (Straker et al., 2004). The implications of the use of different approaches to the measurement of quality could be tested through a satisfaction survey of care home residents and/or a study with regulators investigating the quality of home care services. This latter is unlikely to be feasible in the short term as regulators are only now starting to inspect home care agencies in any detail. However, if it were thought that this might be a promising way forward then it would be important to feed this into the consultation process about care standards and developmental work on performance indicators being undertaken by CSCI.

Output measures

The different trends in underlying activity meant that the results were particularly sensitive to changes in assumptions that affected the relative values of care home and home care outputs. Other assumptions, such as the relative weights used to derive the care home quality measure, were less influential on overall estimated growth rates in outputs.

The results did suggest that measured outputs and changes in these over time were sensitive to the relative weights put on the domains and level within domains. Within the range being used extreme assumptions were made about the relative importance of people remaining in their own homes and this clearly had an important impact. Ongoing work should provide valuable information for testing out the impact of this and a more empirically based weighting for those domains for which we currently have no information.

For the purposes of National Accounts we need to use net outputs. User charges are clearly affected by changes in the charging rules, changes in social security entitlements and the different incomes of successive cohorts of clients. During our period the transfer of the residential allowance (Department of Health, 2003b) and the introduction of free nursing care (Department of Health, 2001b) will have had an impact on the ratio of net to gross expenditure. The overall effect of these changes was that the proportion of expenditure on care homes met by income reduced over the period from around 39 per cent in 2000/01 to 32 per cent in 2003/04. The proportion of expenditure met from charges fell slightly for home care (from 13 to 11 per cent). The overall effect was a higher estimated rate of growth in outputs attributable to public expenditure.

Conclusion

Necessarily the output measures are incomplete. It is notable, for example, that we have no basis at present for including any estimate of the benefit accruing to carers of outputs of mainstream services, let alone services where the objective is benefit to carers. However we have sufficient information to provide an initial indication that the approach could be implemented and where results are likely to be particularly sensitive to assumptions. A key factor is the issue of adding across different types of services and, in the longer term, across client groups. While theoretically the approach should allow us to add the outputs of different services

and client groups, there are a number of practical difficulties while we are drawing on existing sources of data designed for other purposes. There are also important challenges in terms of future availability and continuity of information. However, the work does provide us with a helpful starting point in improving our understanding of changing outputs and productivity in social care.

Appendix A

A1. Domains of outcome

We are aiming to identify four levels within each domain reflecting:

1. No need for assistance
2. All needs met
3. Low level needs
4. High level needs

We anticipate that the distinction between ‘no need for assistance’ and ‘all needs met’ for most domains will be without the assistance of others. If the individual is able to reach the state indicated (for example being personally clean and dressed appropriately) with the use of aids and equipment or a facilitative environment then they would be identified as ‘no need for assistance’. Inclusion of this level will hopefully also allow us to reflect the effect of preventative and recuperative services. The distinction between high and low level needs is that unmet needs at high level needs would be expected to have long or short-term consequences for the individual’s physical or mental health.

The application of these to each domain is described below. In some instances (such as Control and Accommodation) the distinctions described above are not seen as appropriate so alternatives have been proposed and the justification given. To facilitate the design of the preference study we are aiming to identify four levels for each domain. In each domain we are aiming to describe a welfare state with no direct reference to services.

Personal cleanliness and comfort

1. You are able to keep clean and appropriately dressed
2. With help you are always clean and appropriately dressed
3. You are occasionally unwashed or not properly dressed
4. You are much less clean than you would like, with poor personal hygiene

Social participation and involvement

1. You are able to keep in contact with people as much as you want
2. With help you see people as often as you want
3. You feel lonely and socially isolated at times
4. You feel socially isolated with little or no contact from others

Control over daily life

1. You have control over your daily life
2. With help you have as much control over daily life as possible

3. You have some control over daily living but could have more
4. You have no control over daily living

Meals and nutrition

1. You are able organise appropriate meals for yourself
2. You receive sufficient, varied, timely meals
3. You do not always get appropriate food but there is little health risk
4. You have an inadequate diet potentially resulting in a health risk

Safety

1. You have no worries about your personal safety
2. You receive support to ensure you have no worries about your personal safety
3. You have some worries about your safety
4. You are extremely worried about your safety

Accommodation

We have used the four levels to separate the effects of cleanliness and comfort and accessibility. The ordering of levels 2 and 3 may be reversed (or indeed not distinguished) in the light of empirical evidence about people's preferences.

1. Your home is clean and comfortable and is easy to get around
2. Your home is easy to get around but is less clean or comfortable than you would like
3. Your home is clean and comfortable but difficult to get around
4. Your home is not clean or comfortable and is difficult to get around

Employment and occupation

For this domain we have not distinguished between having assistance or not because many individuals purchase assistance by preference. The aim is to identify welfare states that reflect the best possible outcome. In this domain the top two levels are aimed to distinguish between situations where people can choose 'normal' or desirable type of activities from where they are simply occupied.

1. You are fully employed or occupied in meaningful activities of your choice
2. You have enough to do
3. You don't have enough to do
4. You have so little to do it makes you depressed

Role

1. You are providing someone you care for with the quality of support that you want
2. You are not providing someone you care for with the quality or type of support that you would wish
3. At times you find it difficult to cope with the demands of caring
4. You frequently find it very difficult to cope with the demands of caring

A2. Questions relating to meals and nutrition used in home care study

1. Looking at showcard 1 (*show card*) could you tell me which of these statements best describes your present situation with getting enough 'appropriate food' to eat? By 'appropriate food' we mean food that is sufficient, timely, health sustaining and nutritious.

Code one only

- My meals are appropriate (sufficient, timely and varied) 1
- My meals are not always appropriate but I have no real health risk 2
- My meals are inadequate, possibly resulting in a health risk 3
- -9 9

2. Do any of the services or equipment you receive help you to get enough appropriate food to eat?

- No – *Skip remaining meals related questions*
- Yes: (Code all that apply)
 - Home Care
 - Day Centre
 - Lunch Club
 - Meals-on-wheels
 - Transport
 - Equipment
 - Adaptation

3. If you did not have services which situation would best describe how you would feel? (Show card)

- I would have sufficient timely and varied meals 1
- I would not always get appropriate food but there would be no health risk 2
- I would have an inadequate diet possibly resulting in a health risk 3
- -9 9

Appendix B

OPUS: A measure of social care outcome for older people

OPUS (Older People's Utility Scale for Social Care) is a unique measure of outcome of social care that reflects older people's preferences that was developed as part of the Department of Health's Outcomes of Social Care for Adults Initiative. OPUS provides a tool for evaluating social care interventions in both a research and service setting. This summary outlines the development of the instrument and the results of the conjoint analysis used to identify the preferences of older people. The full report describes the process and results in detail (Netten et al., 2002).

Method

A reference group of about 70 individuals was set up drawn from local authority senior and middle managers, the Department of Health, academics, representatives of voluntary organisations and care managers. Two waves of consultation took place with this group: first about the key domains or objectives and second about the structure of the measure. The measure itself was based on previously developed measures: the CAN (Phelan et al., 1995) and CANE (Orrell et al., 1997). In addition, care managers and social workers completed draft versions of the instrument. Findings from these exercises and the views of care managers contributed to the development of the measure and associated guidance.

After extensive pre-pilot and pilot exercises a sample of 356 older people were interviewed to establish their preferences using discrete choice conjoint analysis on a set of 27 scenarios that reflected different levels of unmet need in all domains. Checks were included in the questionnaire for consistency and an additional scale used to rate the same scenarios in order to allow tests of validity. Fifty-eight of those interviewed repeated the exercise in order to allow us to investigate test-retest reliability. Forty-nine were interviewed using the same descriptions, but with an additional attribute included indicating a hypothetical level of monetary benefits that the individual was receiving, in order to investigate whether – and if so at what rate – people would be prepared to trade money against levels of unmet need.

In order to test the measure itself, 58 older people who were receiving services were interviewed. In nine cases the interview was conducted with the carer. A sub-sample of 27 people were re-interviewed two weeks later in order to identify whether results using the measure were stable over a limited period of time.

Defining domains of outcome

Social care is concerned with managing or reducing the effect of impairment on people's daily lives. Outcomes should reflect the primary objective of social care services, which is to meet the needs created by impairment by helping people with personal care tasks or providing company for those who might otherwise be socially isolated. The outcome is the improvement in welfare (or utility) that takes place as a result of the services provided. As the measure is intended to be applicable across all settings in which social care takes place, the domains had to reflect the key areas of people's lives addressed by both community and care home services.

Five domains were identified as the key areas of outcome of social care:

- Meals and nutrition
- Personal care
- Safety
- Social participation and involvement
- Control over daily life

The instrument

For each of the five domains there is a question in the instrument about current levels of unmet need. Respondents are asked to identify whether informal carers and/or services play a role in meeting needs and what the level of need would be in the absence of any service intervention. An additional section addresses specific safety concerns by identifying serious events that have occurred over the previous month. The instrument can be completed as part of the assessment process or in a separate interview. There is scope for the instrument to be completed on behalf of the older person by the carer or a member of staff who knows the individual well, such as the care manager or key worker.

Older people's preferences

Table 1 shows the characteristics of the sample of people interviewed to identify preferences. Compared with the general population the sample were closer to the profile of service users being older, more likely to be female and more likely to be living alone.

For our sample generally the most important domain was Personal care, followed by Social participation and involvement, followed by Control over daily life, followed by Meals, followed by Safety (see figure 1).

Although rated highly by respondents on a simple ranking exercise, the domain of 'sense of safety' was insignificant for several of the analyses and showed an inconsistent pattern of preferences in the main model. A follow-up study suggested that in part this could be due to the generalised nature of the description of unmet need for this domain compared with other domains. Nevertheless, when more a more specific description was used, relating to falls, the domain was still ranked lowest of all the domains.

Preferences were not associated with gender but were associated with age, living circumstances and reporting both some impairment and currently receiving services. People aged 85 and over were more concerned about Meals and nutrition and less concerned about social contact than younger respondents. People who lived with others weighted Social participation and involvement much higher than those who lived alone. Disabled people in receipt of services ranked Meals and nutrition highest, followed by Social participation (see figure 2).

The inclusion of a Monetary domain allowed the estimation of a monetary value of willingness to accept associated with each domain. These were relatively high (summing to over £1,300) suggesting that there is considerable surplus benefit associated with receipt of services.

Initial investigations into the reliability and validity of the measure suggested it was both valid and reliable and reflected genuine differences in perceived needs and outcomes. More work is needed to investigate the most appropriate ways to investigate differences in perceptions, incorporate objective risks and sense of safety and to identify utility weights with nationally representative samples. Specific investigations into groups of interest, such as ethnic minorities, would also be of both substantive interest and potentially provide alternative utility indexes reflecting the perspectives of these groups.

Measuring outcome

The results of the conjoint analysis were used to identify weightings for each of the levels of need for each domain that reflected older people's preferences. Adding the weighted score provided a utility index that indicated the level of welfare of the individual on a scale between 0 (high unmet needs in all domains) and 100 (all needs met in all domains). Two indexes were estimated: one that reflected all levels of met need and all domains, and one that just included statistically significant domains and levels. The latter did not include a weight for safety.

The indexes can be used in a number of ways to measure outcome:

- An outcome index for individuals and groups following the introduction of a social care package. These can be compared across social care packages and conclusions made concerning which packages of care have the greatest effect on welfare or utility.
- The difference between the index before and after the introduction of a social care intervention.
- The difference between the index based on current levels of met need and the Index based on expected levels of met need to reflect the expected utility gain from all services received.
- Incorporation in assessment and reviews and subsequent scoring would allow local authorities to monitor the level of unmet need in individuals approaching them and the subsequent levels of benefit accruing as a result of interventions. This could be done from the perspective of the individual, the carer and the assessor.
- Independent evaluations of service users would also allow comparison across areas or local authorities in levels of welfare among existing clients.
- In large enough samples the probability of the serious events listed in the instrument could be established and compared between groups of interest. This would facilitate a more objective evaluation of risk when putting in place service interventions.

When interpreting the results it would be important to make allowance for differences in levels of need and levels of informal care. Included in economic evaluations the measure would allow the estimation of cost utility ratios.

Appendix C

Deriving quality weights for care services for older people delivered in the home

C1. Method

The PSS survey of home care users in England aged 65 or over was conducted in 2002-03 for the first time but is intended to be triannual and as such provides a good source for ongoing monitoring of services.

In the process of testing the Best Value satisfaction indicator in an extension to the study conducted with 34 local authorities we derived a number of quality measures based on items included in a questionnaire designed by ONS and SPRU for the purpose. This questionnaire included items reflecting aspects of service quality such as reliability; attitudes and behaviour of the care worker such as treating the user with respect; and outcome indicators such as whether the older person felt clean and or was left with nothing to do for long periods. In the case of both the care worker and outcome items responses were on a four point Likert scale ranging from strongly agree to strongly disagree.

In all instances the responses were categorical. In order to exclude arbitrary weights associated with these responses and to improve transparency all the questions were reclassified on a dichotomous basis. It is well established that older people tend to over report satisfaction with care services, possibly through concern about the consequences of criticizing their providers (Applebaum et al., 2000) and this survey was no exception. As a result the reclassification was based on the extreme response (for example, my care workers are *always* on time) against all other responses to the item.

The quality measures used those items included in factor analyses based on the reclassified data, initially limiting the solution to a single factor and secondly identifying the best four factor solution. Tables B1 and B2 show the items included and the factor loadings. In both solutions internal reliability of the factors was high (ranging between .81 and .93) and over 50 per cent of variance in all the data was explained.

C2. Results

Table C3 shows the average scores of the quality indicators based on these variables and how they relate to the overall satisfaction indicator. The overall quality indicator is more comprehensive in terms of domains of quality but has a

lot fewer observations as it includes items for which there were a lot of missing values in the dataset. These missing observations reflect omitted questions by a few of the participating authorities and lower responses to certain types of questions (particularly those set out in a grid arrangement and negatively phrased items). For our purposes here we use the overall indicator as a basis for the estimated weights as this reflects all aspects of service user experience of services. However, we tested the conclusions against the service quality indicator, as this reflects a much higher proportion of the sample.

Table C1: Single quality factor using dichotomous variables

Overall Quality Measure -Variance explained 50.62%, Reliability = 0.93	Loading
Care workers come at times that suit you	0.56
Do your care workers arrive on time?	0.54
Do your care workers spend less time with you than they are supposed to?	0.57
Are your care workers in a rush?	0.51
Do your care workers do the things that you want done?	0.65
Overall, how do you feel about the way your care workers treat you?	0.71
My care workers are understanding	0.85
My care workers are not miserable	0.77
My care workers are obliging	0.87
My care workers are not unfriendly	0.77
As far as I know, my care workers keep any personal details they know about me to themselves	0.81
My care workers do not gossip to me about other people they care for	0.70
My care workers are excellent at what they do	0.89
My care workers are not less thorough than I would like	0.86
My care workers treat me with respect	0.90
My care workers do not do things in their way rather than mine	0.83
My care workers are gentle	0.89
My care workers are not careless	0.87
My care workers are honest	0.86
I am always clean	0.73
I always feel comfortable	0.79
I feel safe in my home	0.64
I have as much contact with other people as I want	0.72
I don't spend too long with nothing interesting to do	0.63
I get up and go to bed at times which suit me	0.74
The help I get from Social Services has made me more independent than I was	0.65

Table C3 shows that while there is a clear (and statistically significant) difference in the quality scores at the upper end of the satisfaction measure the results are less consistent at the lower end where there are fewer observations. Once grouped there are no statistically significant differences in reported quality between those expressing 'neutral' or any level of dissatisfaction. There are statistically significant differences between all other levels of satisfaction however.

Table C4 shows the values of the overall quality measure when the levels of satisfaction are grouped together combining those levels where there was no statistically significant difference. Table C5 shows the same if 'extremely' and 'very' levels of satisfaction are grouped together. Using these grouped levels of satisfaction the estimated quality values are very stable. When the sample is randomly split into two the estimated quality scores are almost identical for all levels of satisfaction and no significant effects are found between the two groups.

Tables C4 and C5 also show the standardised scores using the highest level of satisfaction (scoring 1) to indicate the best possible quality. The resulting quality

Table C2: Four factors solution using dichotomous variables

	Loading
Carer Quality-Positive Opinions Towards Carer Variance Explained 20.36%, Reliability = 0.92	
My care workers are understanding	0.76
My care workers are obliging	0.73
As far as I know, my care workers keep any personal details they know about me to themselves	0.66
My care workers are excellent at what they do	0.71
My care workers treat me with respect	0.77
My care workers are gentle with me	0.75
My care workers are honest	0.73
Service Quality Variance Explained 17.03%, Reliability = 0.81	
Do your care workers come at times that suit you?	0.73
Do your carers arrive on time?	0.72
Do your care workers spend less time with you than they are supposed to?	0.69
Are your care workers in a rush?	0.66
Do you always see the same care workers?	0.59
Do your care workers do the things that you want done?	0.72
Are you kept informed, by your home care service, about changes in your care?	0.62
Overall, how do you feel about the way your care workers treat you?	0.65
Carer Quality-Negative Opinions Towards Carer ^aVariance Explained 16.59%, Reliability = 0.86	
My care workers are not miserable	0.78
My care workers are not unfriendly	0.79
My care workers do not gossip to me about other people they care for	0.67
My care workers are not less thorough than I would like	0.70
My care workers do not do things in their way rather than mine	0.62
My care workers are not careless	0.75
Outcomes-Variance Explained 12.04%, Reliability = 0.81	
I am always clean	0.63
I am always comfortable	0.66
I feel safe in my home	0.53
I have as much contact with other people as I want	0.73
I don't spend too long with nothing interesting to do	0.68
I get up and go to bed at times which suit me	0.61

a Negative questions have been recoded so a higher score indicates a more positive view of the carer.

weights are shown for each level of satisfaction. These can then be applied to the proportion of respondents in the national user experience survey to indicate national levels of quality. We report the national levels of satisfaction in section 5 and the resulting quality weight for the home care service as .632 (95 per cent confidence interval +/- .002) using the four level basis shown in table C4. Using the three level solution in table C5 the quality weight would be .781 (95 per cent confidence interval +/- .007).¹⁰

10 The 95 per cent confidence intervals just reflect the variation in the quality scores not the proportions in the population expressing each level of satisfaction.

Very similar results are obtained using the service quality indicator as a basis for the weights (.680 using the four levels and .806 using the three levels of satisfaction).

Table C3: Average quality scores

Level of satisfaction	% sample (N=20446)	Overall (N=9333)	Service (18035)	Outcome (N=14365)	Positive care worker (N=13608)	Negative care worker (N=13090)
Extremely	26	18.62	6.33	3.34	5.65	4.32
Very	34	12.43	4.8	2.05	3.38	2.96
Quite	32	7.94	3.14	1.47	1.99	1.91
Neutral	5	5.33	1.71	1.28	1.51	1.30
Fairly	2	4.7	1.46	1.13	1.33	1.11
Very	1	4.97	1.32	1.45	1.42	1.33
Extremely	1	6.37	1.73	1.71	2.48	1.77
Mean (SD)	n/a	12.00 (7.64)	4.41 (2.50)	2.10 (1.98)	3.42 (2.86)	2.83 (2.22)

While there is no data as yet about changes over time we can identify how the indicator would change if there were to be reported changes in levels of satisfaction. Table B6 below shows the changes in both indicators under a number of scenarios. As reported in section 5 national data on satisfaction levels are reported as having confidence intervals of less than +/-1 per cent so we can be confident such shifts do reflect real changes in quality.

Table C4: Grouped quality scores and weights using four levels

Level of satisfaction	Number of cases	Quality score	Standardised quality weight
Extremely	2288	18.62	1
Very	3413	12.43	.668
Quite	2982	7.94	.426
Neutral/dissatisfied	650	5.19	.279

Table C5: Grouped quality scores and weights using three levels

Level of satisfaction	Number of cases	Quality score	Standardised quality weight
Extremely/very	5701	14.91	1
Quite	2982	7.94	.532
Neutral/dissatisfied	650	5.19	.348

Table C6: Sensitivity of quality measure to reported changes in satisfaction

Changes in level of satisfaction	4 level quality index	3 level quality index	Using BV % indicator
1% shift improvement throughout	.639	.787	.58
1% shift from very to extremely satisfied	.635	.781	.57
Move to 76% very/extremely ^a	.734	.877	.76
No change	.632	.781	.57

^a The highest level that was reported by any LA in 1993 (Department of Health, 2003a). We have assumed that 40 per cent were extremely and 36 per cent very satisfied.

It is not possible to conduct the same analyses for younger disabled adults as there are not individual level data available. However, we are discussing with SPRU the

applicability of these weights to the younger age group and potential for analyses of the data that are available.

C3. Conclusion

There are, of course, many problems associated with using measures of satisfaction, however all the evidence suggests that this measure is reasonably robust and reflects views about older service user experiences. One issue it is not yet possible to investigate is the degree to which changes over time may reflect changing expectations rather than changing experiences of quality. Weighting the satisfaction measure to reflect different levels of reported quality on more specific aspects of the experience (such as service reliability and being treated with respect) provides a weight that more accurately reflects differences in quality. All the indications are that the estimated weights are stable and reliable indicators of quality but there will be an opportunity to test this when the user experience survey is repeated in 2005/06. The best weight is based on the four level satisfaction indicator, as this reflects all the statistically significant variation in reported quality. However it may be more acceptable to use the three levels of satisfaction as this better reflects the proportions used in the Best Value Performance Indicator.

Appendix D

Care standards

Table D1: Key standards for homes for older people

No	Standard	Definition
3	Needs Assessment	No service user moves into the home without having had his/her needs assessed and been assured that these will be met.
6	Intermediate Care	Service users assessed and referred solely for intermediate care are helped to maximise their independence and return home.
7	Service User Plan	The service user's health, personal and social care needs are set out in the individual plan of care.
8	Health Care	Service users' health care needs are fully met.
9	Medication	Service users, where appropriate, are responsible for their own medication, and are protected by the home's policies and procedures for dealing with medicines.
10	Privacy and Dignity	Service users feel they are treated with respect and their right to privacy is upheld.
12	Social Contact and Activities	Service users find the lifestyle experienced in the home matches their expectations and preferences, and satisfies their social, cultural, religious and recreational interests and needs.
13	Community Contact	Service users maintain contact with family / friends / representatives and the local community as they wish.
14	Autonomy and Choice	Service users are helped to exercise choice and control over their lives.
15	Meals and Mealtimes	Service users receive a wholesome appealing balanced diet in pleasing surroundings at times convenient to them.
16	Complaints	Service users and their relatives and friends are confident that their complaints will be listened to, taken seriously and acted upon.
18	Protection	Service users are protected from abuse.
19	Premises	Service users live in a safe, well-maintained environment.
26	Services: Hygiene and Control of Infection	The home is clean, pleasant and hygienic.
27	Staff Complement	Service users needs are met by the numbers and skill mix of staff.
29	Recruitment	Service users are supported and protected by the home's recruitment policy and practices.
30	Staff Training	Staff are trained and competent to do their jobs.
33	Quality Assurance	The home is run in the best interests of service users.
35	Service Users' Money	Service users' financial interests are safeguarded.
38	Safe Working Practices	The health, safety and welfare of service users and staff are promoted and protected.

Table D2: Other (non-key) standards for homes for older people

No.	Standard	Definition
1	Information	Prospective service users have the information they need to make an informed choice about where to live.
2	Contract	Each service user has a written contract/statement of terms and conditions with the home.
4	Meeting Needs	Service users and their representatives know that the home they enter will meet their needs.
5	Trial Visits	Prospective service users and their relatives and friends have an opportunity to visit and assess the quality, facilities and suitability of the home.
11	Dying and Death	Service users are assured that at the time of their death, staff will treat them and their family with care, sensitivity and respect.
17	Rights	Service users' legal rights are protected.
20	Shared facilities	Service users have access to safe and comfortable indoor and outdoor communal facilities.
21	Lavatories and Washing Facilities	Service users have sufficient and suitable lavatories and washing facilities.
22	Adaptations and Equipment	Service users have the specialist equipment they require to maximise their independence.
23	Individual Accommodation: Space Requirements	Service users own rooms suit their needs.
24	Individual Accommodation: Furniture and Fittings	Service users live in safe, comfortable bedrooms with their own possessions around them.
25	Services: Heating and Lighting	Service users live in safe, comfortable surroundings.
28	Qualifications	Service users are in safe hands at all times.
31	Day-to-Day Operations	Service users live in a home which is run and managed by a person who is fit to be in charge, of good character and able to discharge his or her responsibilities fully.
32	Ethos	Service users benefit from the ethos, leadership and management approach of the home.
34	Financial Procedures	Service users are safeguarded by the accounting and financial procedures of the home.
36	Staff Supervision	Staff are appropriately supervised.
37	Record Keeping	Service users' rights and best interests are safeguarded by the home's record keeping policies and procedures.

Table D3: Linking care home standards for younger adults to domains of outcome for the measurement of PSS outputs (*=key standard)

No.	Standard	Domain	Comment
7*	Service users make decisions about their lives and assistance as needed.	Control over daily life	An aspect of control. With 9 covers domain.
9*	Service users are supported to take risks as part of an independent lifestyle.	Control over daily life	An aspect of control. With 7 covers domain.
12*	Service users are able to take part in age, peer and culturally appropriate activities.	Employment and occupation	Exactly the domain required
13*	Service users are part of the local community.	Social participation and involvement	With 15 covers domain
15*	Service users have appropriate personal, family and sexual relationships.	Social participation and involvement	With 13 covers domain
16*	Service users' rights are respected and responsibilities recognised in their daily lives.	Across all domains	Process quality indicator to interact with all other domains in the quality measure
17*	Service users are offered a healthy diet and enjoy their meals and mealtimes	Meals and nutrition	Exactly the domain required
18*	Service users receive personal support in the way they prefer and require.	Personal comfort	Exactly the domain required
23*	Service users are protected from abuse, neglect and self-harm.	Safety	The domain really is about whether people feel safe rather than are protected we could assume an association.
24*	Service users live in a homely, comfortable and safe environment.	Accommodation and safety	This domain reflects both the safety and the access aspects of the environment.
30*	The home is clean and hygienic.	Accommodation	Covers cleanliness aspect but not access. Again do not pick up improvements in quality such as en-suite facilities.

Table D4: Varying assumptions when weighting inspector judgments on standards

Inspector judgement	Privacy and dignity (Standard 10)	Base weights	High weights	Low weights
Exceeded	Met	1	1	1
	Not met	.9	.9	.8
Met	Met	.6	.8	.5
	Not met	.5	.7	.4
Almost met		.3	.5	.2
Not met		.1	.25	.05

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