Analysis to Support the Development of FSS Formulae for Older People: Interim Report

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PSSRU Discussion Paper 2237/3
June 2005

Contents

Index of Tables

Acknowledgements

This study was funded by the Department of Health. We would like to thank the local authorities which agreed to participate in this study; NOP World who managed the main data collection; Paul Dixon for his advice and for organising the small area data collection; and Raphael Wittenberg, Becky Henderson, Philip Witcherley and other members of the advisory group for all their help and advice. The views expressed in this report are those of the authors and are not necessarily those of the Department of Health.

Summary

1. This paper reports on options for an improved and updated formula for the formula spending share (FSS) for PSS for older people.

2. Two approaches were adopted. First, individual level analyses used information about older people in receipt and not in receipt of services. This approach required the collection of data from a sample of care home admissions and home care service users. Second, small area analyses used information about service receipt on an area basis.

3. The individual analysis drew on data provided by 16 local authorities. Delays at the start of the project and problems in data collection mean that, at this stage, individual analyses are based on a dataset of admissions to care homes in the mid 1990s, adjusted to reflect the characteristics of current admissions. This was combined with data about current home care recipients and GHS data about non-service users.

4. Data on 547 care home admissions and 388 people in receipt of domiciliary care have been received. By September we will have data on 998 care home admission, if information is received on all those who gave consent. By September we will also have data from a maximum of 397 people in receipt of domiciliary services, if complete information is provided from all those surveyed. We aim to re-estimate this option in September using entirely 2005 survey data.

5. The principal technical problem in using the re-weighted 1995 data on admissions as the basis of the formulae modelling was estimating who would have received Pension Credit in 1995. Further details are given on pages 6 and 7.

6. Logistic and OLS analyses identified the characteristics associated firstly with receipt of services and secondly with the costs of those services. The best fitting linear equations, which provided very similar results to the theoretical model, were used to generate proposed formulae.

7. Three formulae were estimated based on central and upper and lower assumptions about Pension Credit receipt. The formulae all included:
    - Age (80-84 and 85+)
    - Household characteristics (Single pensioner living with others)
    - Tenure (Renting)
    - Limiting longstanding illness
    - Benefits (receipt of Pension Credit and AA/DLA)

8. The small area analysis draws on service use provided by 17 local authorities. It is based on 76,325 older social service users in 784 wards. This was combined with ward level census data, area information about benefit receipt and other nationally available information about CSSRs, including earnings and the area cost adjustment.

9. Demand functions were estimated using multilevel random effects models with a service 'price' indicator as an explanatory variable. This price was derived as the service weighted local unit cost (deflated by the ACA to account for input cost differences) over the service weighted national cost.

10. Two models were estimated, one based on rates per head of population 65 plus and the second on total spend and numbers. The formula based on the former included:
    - Age (90+)
    - Household characteristics (Single person households)
    - Tenure (Renting)
    - Benefits (receipt of Pension Credit and AA)

1. Introduction

This paper reports the interim findings of a study of social services for older people in England. The aim of the study is to produce options for an improved and updated formula for the formula spending share (FSS) which is used to allocate central government funding to councils with social service responsibilities (CSSRs), concentrating on the needs component. We do not present here principles or details of the approaches used, which will be provided in the final report, but focus on the calculation of the formulae.

The approach to determining the needs component for the FSS formula involves the prediction of demand for social services on the basis of an estimate of the number of people living in a CSSR area who might be expected to need services under a standard level of service. The development of services in recent years indicated that up-to-date information was needed, and since sources of secondary data such as the General Household Survey (GHS) are incomplete, new data collections were required. Two approaches were adopted. First, individual level analyses required information about older people in receipt and not in receipt of services. Second, small area analyses required information about service receipt by individuals in specific areas (usually wards) with known characteristics.

We start by describing the data collections and a discussion about the representativeness of these data before describing first the results of the individual level analyses and then the small area analyses.

2. Method and Data

The data collection for the individual level analyses comprised a sample of admissions to care homes and a sample of people currently receiving home care. The study of admissions to care homes followed the design of the successful survey of admissions conducted in 1995 for input into the calculations of the Standard Spending Assessment formulae (Bebbington et al., 1996), using similar questionnaires to collect information on the needs-related and financial circumstances of those admitted. The questionnaires were completed by local authority staff from the information collected in the care and financial assessments, subject to the older person's consent. The home care survey employed a personal interview with the older person or a proxy. In some authorities, individual information about the respondent's financial circumstances was obtained from the financial assessment, subject to the older person's consent. The home care survey questionnaires were designed to be compatible with the questionnaires for the survey of admissions and the relevant questions in the GHS. NOP World conducted the fieldwork for the two surveys.

The surveys of admissions to care homes and of home care recipients were planned to yield usable samples of 1200 admissions and 600 individuals receiving home care. The data from these surveys would then be combined with the data in the 2001-02 General Household Survey on people aged 65 and over who were not receiving home care. However, although 16 local authorities were eventually recruited for the study, which should have been sufficient to yield the required number of questionnaires, fewer completed questionnaires were obtained than expected in both surveys. In the survey of

admissions, the number of admissions identified by the participating authorities was much lower than the expected number, and delays in the fieldwork reduced the number of usable returns available for the current report. In the home care survey, three of the selected local authorities withdrew, including two counties, and there was a substantially larger refusal rate than predicted. The sampling fraction used in the home care survey was increased to allow for the higher refusal rate, where possible, and additional samples of home care clients were selected in three of the participating authorities. However, only two-thirds of the planned number of completed interviews could be obtained. In addition, in six of the participating authorities financial information was collected from local authority records following the interview, and delays in collecting this information reduced the number of usable returns available for this report. Appendix A describes the sample design and adjustments made in more detail.

Following discussions with the Steering Group, it was agreed to adopt two approaches to the shortfall in the number of cases available for the current report. For admissions to care homes, the data from the 1995 survey of admissions to care homes would be used in place of the 2005 survey, reweighted to reflect the distribution of types of authority and the dependency profile of individuals admitted to care homes in 2005. It should be noted that the 1995 data did not include unitary authorities, and so unitary authorities have had to be combined with counties in the weighting procedure for care homes. For home care clients the data available from the survey would be augmented with the data available in the 2001-02 General Household Survey.

The fieldwork for the surveys is continuing in order to increase the number of usable cases, and the final report in September 2005 will be based on an analysis of data collected in the 2005 survey of admissions to care homes.

For the small area analysis service receipt data were drawn from local authority information systems. This involved the collection of information on the numbers of clients, service volumes and expenditure, aggregated to the postcode, ward or local authority level. The collection of data on older people was undertaken by Secta Consulting as part of their study on younger adults, and the data were transferred to the PSSRU for analysis. Section 5 describes the data used for the small area analysis in some detail.

3. Sample Representativeness for Individual Level Analysis

Problems in the data collection for the individual level analysis raise the question whether the data are nationally representative. Table 1 compares the returns in the survey of admissions to care homes with the latest national figures (Department of Health, 2004b) for the distribution of admissions by type of authority and type of care. London authorities and metropolitan districts were over-represented in the survey compared with shire counties and unitary authorities, as reflected in the distribution of all 662 cases available to date. Among the cases with complete data (338 cases), those in London are not over-represented, but unitary authorities are even more poorly represented. For these cases the proportion of those admitted for nursing care is slightly larger than the national figure. The distribution by type of authority in the full dataset to

be used for the final report is likely to be more similar to that of the 662 cases available to date.

Table 1: Permanent admissions to care homes

	England, 2003-04 %	Survey, 2005 (662 cases) %	Survey, 2005 (338 cases) %
London	10.7	26.0	12.7
Metropolitan districts	24.0	32.7	36.4
Shire counties	48.4	35.7	48.8
Unitary authorities	16.9	5.6	2.1
Residential care	60.3	–	54.4
Nursing care	39.7	–	45.6

For the purpose of reweighting the data from the 1995 survey to correspond to the dependency profile of individuals admitted to care homes in 2005, individuals have been classified into four groups according to their scores on the Barthel Index of Activities of Daily Living (Mahoney and Barthel, 1965) and the MDS Cognitive Performance Scale (Morris et al., 1994). For the Barthel Index of ADL, scores of 9 to 20 have been classified as 'low' dependency, and scores of 0 to 8 have been classified as 'high' dependency. For the MDS CPS, scores of 0 to 3 have been classified as 'low' levels of cognitive impairment and scores of 4 to 6 have been classified as 'high' levels of cognitive impairment. The fourfold classification of these two groups is shown in table 2.

Table 2: Dependency of individuals admitted to care homes, 1995 and 2005

Physical dependency /cognitive impairment	Survey, 1995 (1749 cases) %	Survey, 2005 (545 of 662 cases) %	Survey, 2005 (276 of 338 cases) %
Low dep/low cog imp	46	33	30
High dep/low cog imp	21	23	23
Low dep/high cog imp	15	16	19
High dep/high cog imp	18	28	28
High dependency	38	51	50
High cog imp	33	44	47

For physical dependency, as measured by the Barthel Index, the proportion of more dependent individuals admitted to care homes has increased from 38 per cent to 51 per cent, while the proportion of severely cognitively impaired individuals has increased from 33 per cent to 44 per cent. For this report, the dependency distributions for the 545 cases have been used to reweight the data from the 1995 survey for the analysis. For those individuals whose type of care was known (338 cases), the proportion with higher levels of cognitive impairment was larger than for the 545 cases (47 per cent for those with dependency information, compared with 44 per cent). However, since 46 per cent

of this group entered nursing home care, compared with 40 per cent nationally, the use of the figures for this group to derive the weights would be likely to over-estimate the proportion of those with cognitive impairment. This suggests that weighting the 1995 data to reflect the profile of the 545 cases is more appropriate than using the profile for the smaller number of cases whose destination was known.

Table 3 compares the returns in the survey of home care with the latest national figures (Department of Health, 2005a,b) for receipt of home care services for the distribution by type of authority, intensity of home care services and ethnicity. To date, information is available for 388 individuals, and complete information, including financial information, is currently available for 211 individuals. As for the survey of admissions to care homes, London authorities were over-represented in the survey, compared with shire counties and unitary authorities. However, the proportion of individuals in metropolitan districts was close to the national figure and individuals in unitary authorities were less under-represented than in the survey of admissions. The survey over-sampled individuals receiving intensive home care services, defined as more than 10 hours per week, by selecting equal numbers of those receiving intensive and non-intensive services. One-third of the individuals in the achieved sample were recorded as receiving intensive home care services, indicating a higher level of non-response for this group. Further information is being collected about the characteristics of the non-respondents (see Appendix A) and this will be examined in the final report.

Nine per cent of the individuals in the home care survey were classified as non-white, compared with 3 per cent of clients aged 65 and over who received an assessment in England (Department of Health, 2005a). The survey over-sampled local authorities with high ethnic minority populations and, although the final sample of local authorities contained fewer such authorities than planned, non-white individuals remained over-represented in the sample. No weighting has been applied for the ethnic composition of the sample.

Table 3: Home care clients

	England, 2003-04 %	Survey, 2005 (388 cases) %	Survey, 2005 (211 cases) %
London	14.1	38.4	41.7
Metropolitan districts	26.4	30.4	28.4
Shire counties	43.6	21.4	20.9
Unitary authorities	15.9	9.8	9.0
Intensive	25.9	34.8	35.1
White	88.1	91.0	91.0
Non-white	2.7	9.0	9.0
Not known	9.2	0.0	0.0

4. Individual Level Analysis

4.1 Data

The individual level analysis was based on the following datasets:

- The 1995 PSSRU survey of admissions to care homes (approx 1,800 people with complete data).
- The 2005 PSSRU/NOP survey of admissions to care homes (approx 500 people with complete needs data, but not financial data, at the time of writing).
- The 2005 PSSRU/NOP survey of home care recipients (approx 200 people with complete data at the time of writing).
- The 2001 General Household Survey (people over 65): which is divided between (i) community care recipients (118 individuals) and (ii) non-recipients (3,200 individuals).

Delays with returns to the two 2005 recipients surveys resulting in small numbers of respondents and lateness of financial information have led to a compromise strategy for analysis which will be described fully elsewhere but is in practical terms characterised by a complex weighting approach designed to create a sample that is plausibly representative of service recipients at the present time. Elements of this approach include the following:

- The 2005 PSSRU/NOP survey of admissions has not been used directly, but instead has been used to adjust the 1995 PSSRU survey of admissions in three key respects to make it representative of care home residents at the present time. These are weighting (i) to reflect the greater dependency both in physical and mental terms, of residents at present; (ii) to reflect the correct balance in numbers supported by local authorities of different types - London boroughs etc.; (iii) to reflect accurately the overall proportion of care home recipients nationally in the general population of people aged 65, based on the most recent PSS returns.
- The 2005 PSSRU/NOP survey of home care recipients was weighted to reflect the correct balance in numbers supported by local authorities of different types - London boroughs etc.
- The 2001-02 General Household Survey sample of people over 65 was weighted on the basis of both (i) Attendance Allowance/DLA and (ii) Income Support, to reflect accurately the numbers of elderly recipients of AA/DLA and Pension Credit in the latest available statistics (see also para 8 below).
- The 2005 PSSRU/NOP and the GHS 2001-02 subsample of community care recipients were then combined. The combined sample was reweighted to reflect accurately the overall proportion of (i) intense and (ii) non-intense home care recipients nationally in the general population of people aged 65 and over, based on the most recent PSS returns (Department of Health, 2005b), intense being defined as over ten hours of home care per week.

The analysis was therefore based on a combined sample of the PSSRU 1995 admissions survey, the 2005 PSSRU/NOP home care recipients survey and the 2001-02 GHS (recipients and non-recipients) weighted together as described above.

4.2 Analyses

The predicted (dependent) variable for this analysis was the gross weekly cost of the SSD provided services. For service recipients this was determined as the average national unit price for the service (nursing homes, residential homes, home care, day care, meals) multiplied by the weekly volume of services received. More accurately this should be described as a price-weighted volume rather than cost. Adjustment for local price variations and for the ability of clients to contribute is made elsewhere. The cost for non-recipients was zero.

The predictor variables were based on characteristics for which census counts and benefit data will be available for local authorities. A list of those used is included in the tables. The characteristics of individuals linked to census indicators have been re-examined in some detail, resulting in some changes from the list recommended in the 2002 SSA analysis conducted by PSSRU on the basis of their significance in the present analysis: the principal changes are described below.

A particular problem arises in relation to Pension Credit. Pension Credit replaced Income Support in 2003, but entitlement was wider, and so the number of recipients of Pension Credit is now about half as much again as the former number of elderly recipients of Income Support. Formerly, Income Support receipt was significantly associated with receipt of social services, and we would expect the same must be true of Pension Credit. As counts of recipients are available at local level, this is a useful indicator. Unfortunately however, information about Pension Credit is only available in the 2005 PSSRU/NOP surveys of admissions to care homes and of home care recipients. In order to cope with this we adopted the following strategy:

- Income Support recipients in the 2001-02 GHS sample were given an increased weight on the assumption that this group will effectively represent, for the present purposes, current Pension Credit recipients.

- We have needed to estimate who in the 1995 PSSRU survey of admissions to care homes would now have been receiving Pension Credit (prior to admission). A basis for this is a financial assessment of people who were admitted, including information about Income Support receipt. However the financial assessment does not reproduce the rules for Pension Credit entitlement and in any case not all those eligible for a benefit will necessarily receive it. We have dealt with this uncertainty by a sensitivity analysis, using three variant assumptions about who would have received Pension Credit. Information from the 2005 PSSRU/NOP survey of admissions to care homes shows that of the 367 individuals so far for whom Pension Credit information has been given, 74 per cent were recipients (in 1995, 53 per cent of entrants had been receiving Income Support). Our assumption for the 1995 survey is therefore that all those receiving Income Support, plus a number of those not receiving IS but at the lower end of the distribution in their financial assessment, might have been receiving Pension Credit under present rules. For the central variant, the cut-off point for the latter group was selected, so that 75

per cent of all those in the 1995 survey are assumed to now have been receiving Pension Credit. The low and high variants use a similar approach but with 70 and 80 per cent respectively. We can be reasonably certain that the true proportion lies between these figures.

- For the home care survey, financial information, in particular the receipt of Pension Credit, was collected from six of the 13 participating local authorities, and delays in collecting this information were important factors in reducing the number of cases with complete information from 388 to 211. An enquiry into the charging policies adopted by the participating authorities indicated that individuals receiving Pension Credit would not be required to pay for services, following Department of Health guidance (Department of Health, 2003). However, there was very little difference in the proportion of clients who were not paying for services among recipients of Pension Credit (46 per cent) and non-recipients of Pension Credit (43 per cent). Thus it was not possible to assume that the clients with missing financial data that were not paying for services were recipients of Pension Credit, and so these individuals could not be included in the analysis.

The direct consequence of the above is that three variants of the final formula are presented. The sensitivity of the results is reported below.

The analysis consists of two steps. The first is to fit a theoretically appropriate two stage econometric model to the data. The two stages consist of (i) what is the probability that a person with given characteristics will be a service recipient, either of home care or care in a home; (ii) given that someone is a recipient, what the cost (or more accurately, the price-weighted volume) of those services is. Various functional forms for this two-stage model have been considered, such as the Heckman Selection Model (Heckman, 1976), which vary according to their theoretical assumptions about the processes driving the resource allocation. In the event, the selected model, as in previous analysis of this type, consists of a logistic model for the probability that someone is assessed for services, and an OLS model for cost. It is usual in such cases to consider a transformation of the cost variable prior to analysis in order to satisfy certain distributional requirements of the method, but in the present case, unusually this was found not to be necessary.

Results of this two-step model *for the central variant only* are shown in table 4. The predicted demand by each individual from the above model is the product of the two parts, i.e. expected probability of being a recipient multiplied by the expected cost if that person was a recipient. In theory these estimates could be summed across all residents over 65 of a local authority to give a total resource estimate. However in practice this is not possible. The product formula is too complex to be applied to the available counts from the census and benefits data. Moreover, there is a preference to avoid non-linear formulae in the FSS.

The second step in the analysis is therefore to find the best fitting linear equation and ensure that it provides similar results to the theoretical model. This is based on OLS regression of the cost across all individuals in the combined sample, taking non-recipients' cost as zero. The results of this calculation are shown in table 5, in this case for all three variants. The correlation of the predicted cost from this equation, over all individuals in the combined sample, with the predictions from the two-step model is

0.90 or better for all three variants. This is reassuring that the best fitting equation is giving a reasonably close approximation to the theoretical model.

It should be noted that coefficients in table 5 can be interpreted directly in cost terms. The negative constant term implies that the calculation for each authority starts from a negative amount, and will then add amounts according to the numbers of individuals with particular characteristics. It is unlikely (but not impossible) that this could result in a negative overall estimate for an authority.

4.3 Results

The following are some on the selection of predictor indicators in the final form of this model, particularly in relation to changes from formulae recommended in the past. Table 6 shows how these should be constructed from local authority 2001 census counts.

- *Age Groups*. The probability of service use now increases rapidly after 80. It is worthwhile to break the 75-84 age group into two subgroups, 75-79 and 80-84, on the basis of a much greater likelihood of service receipt in the latter group. However, age has much less impact on the amount of service provided. In the linear form of the equations (table 5) age 75-79 proved not significant and has been dropped. Thus we are proposing two slightly different age groups from previous formulae.

- *Household composition*. This has been re-examined carefully with the result that it is rather different from before. Three categories of household status for people over 65 are now used: (i) people living alone; (ii) married/living as married people in households of 2+ people; (iii) single living with others. We have dropped the indicator 'people over 65 living in households where neither they nor their spouse is head of household'. The number of such people has fallen considerably in the last 15 years, and as a result this factor is no longer significant in any equation. However, it has been replaced by 'people who are single (not married or living as married) who are living with other people'. This is a high-cost group as such people are at comparatively high risk of needing a care home place. People who live alone are at higher than average risk of needing services, but these tend to be low-cost. Overall, living alone is not a significant cost raiser, and is not included in the linear form of the equations (table 5).

- *Tenure*. A few people in miscellaneous accommodation are categorised along with renting. Renting raises the probability of service receipt, but does not influence the cost of that service.

- *Limiting Longstanding Illness*. Limiting longstanding illness both raises the probability of service receipt and the subsequent cost of services.

- *Benefits*. Both Pension Credit and Attendance Allowance/DLA are associated with a much raised probability of service receipt. However, they have different effects on costs. A very high proportion of admissions to care homes appear to have received Pension Credit, and so this is a marker for high costs. On the other hand, Attendance Allowance (which residents are not entitled to after four weeks' stay) is more associated with domiciliary services receipt, and so is

a marker for below average costs. Table 5 shows the sensitivity of the three variant assumptions about the number of people entering care homes who receive Pension Credit. Clearly the equations are somewhat sensitive to the assumption. The more people getting Pension Credit among this group, the more Pension Credit is a cost-raiser. Ideally it would be best to have improved information here.

- *Ethnicity* has been retested but, due to the low numbers overall in the highest age groups, there is still no significant quantitative evidence of its effect on the probability of receiving services.

Based on the evidence we have, we would recommend that for the FSS formula for older people, consideration should be given to the use of the linear equation for the central variant (the shaded column in table 5).

Table 4: Two-part model for predicting cost of SSD-funded services (individual analysis)

Note: This model is presented here only for the Central Variant.

(i) Logistic Model for Service Receipt
(ii) OLS Model for Costs (service recipients only)

	Proportion of weighted combined sample in listed category (%)	(i) Service receipt			(ii) Cost, recipients only	
		Coeff.	Signif.	Odds Ratio	Coeff. (£)	Signif.
Age						
65 - 74	52	0.000	ref	1.00	0.00	ref
75 - 79	22	0.596	**	1.81	9.57	ns
80 - 84	16	1.226	**	3.41	25.67	ns
85+	10	1.982	**	7.26	42.67	*
Household Comp						
Living alone	41	0.511	**	1.67	-43.43	*
Married/living as	51	0.000	ref	1.00	0.00	ref
Single living with others	8	0.407	ns	1.50	18.15	ns
Renting (LA or private)	35	0.368	**	1.45	15.03	ns
Limiting longstanding illness	48	1.237	**	3.45	112.27	**
Benefits recipient						
Pension Credit	43	0.644	**	1.90	57.14	**
AA or DLA	23	1.740	**	5.70	-61.04	**
Constant		-5.710	**	na	110.28	**
n (unweighted)		*5097*			*2072*	
R^2		0.37			0.15	

** denotes significance at 1% level, * at 5% level, 'ns' not significant, 'ref' denotes the reference category.

Table 5: Linear approximations for predicting cost of services

	Low Variant		Central Variant		High Variant	
	Coeff. (£)	t-stat	Coeff. (£)	t-stat	Coeff. (£)	t-stat
Age 80-84	14.30	5.73	14.13	5.67	13.96	5.61
Age 85+	47.10	15.64	46.79	15.55	46.50	15.48
Single living with others	11.03	3.28	10.80	3.21	10.49	3.13
Renting (LA or private)	6.15	3.14	5.68	2.91	5.08	2.60
Limit long-term illness	13.21	6.57	13.12	6.53	13.00	6.49
Pension Credit	9.99	5.40	11.93	6.46	14.36	7.79
AA/DLA	27.90	11.43	28.16	11.55	28.47	11.70
Constant	-9.82	-6.53	-10.45	-6.95	-11.23	-7.49
R^2	0.15		0.15		0.15	

All coefficients shown are statistically significant at nominal 1% level.

Table 6: Construction of local authority census counts for FSS indicators

Indicator	2001 Census
People aged 65+ living in private households	S0040256 + S0040273 + S0040290 + S0040307 + S0040324 + S0040341
People aged 75-79 living in private households	S0040290
People aged 80-84 living in private households	S0040307
People aged 85+ living in private households	S0040324 + S004034
People aged 65+ who are living alone	T050577 + T050578 + T050579 + T050583 + T050584 + T050585
People aged 65+ who are married (or living as married)	T050538 + T050539 + T050540 + T050544 + T050545 + T050546 + T050551 + T050552 + T050553 + T050557 + T050558 + T050559
People aged 65+ who are single and living with others	T050525 + T050526 + T050527 + T050531 + T050532 + T050533 + T050564 + T050565 + T050566 + T050570 + T050571 + T050572
People aged 65+ not in owner occupation (renting)	T050460 + T050461 + T050462 + T050466 + T050467 + T050468 + T050473 + T050474 + T050475 + T050479 + T050480 + T050481 + T050486 + T050487 + T050488 + T050492 + T050493 + T050494 + T050499 + T050500 + T050501 + T050505 + T050506 + T050507
People aged 65+ living in private households with limiting longstanding illness	S0160218 + S0160230 + S0160242 + S0160254 + S0160266 + S0160278
People aged 65+ whose ethnic group is non- White	T13137 – T13138 – T13139 – T13140 + T13154 – T13155 – T13156 – T13157

Cell numbering conventions follow the 2001 Census Standard and Theme Tables.

5. Small Area Analyses

5.1 Data

The small area analysis uses data from five main sources:

- Councils provided a download of service use for each client on their books at a pre-determined date. The data indicated whether each client was using one or a combination of: domiciliary (home) care, day care, direct payments and care home (personal care) and care home (nursing care). We also requested the pre-care address of clients. Use of these services by individuals could then be grossed up to the respective (pre-care) ward level to give total supported service activity in the above categories.
- Census data at 2003 ward level, including details of population, age structure, tenure and household composition.
- Benefits data from DWP, including Pension Credit and Attendance Allowance.
- Data collected about CSSRs by DH, including the area cost adjustment.
- Other local authority level data such new earnings survey wage data.

These data were combined or 'matched' at the small area level, and this geographical area is the basis for the association between the data points.

There are 7,987 census wards (2003) in England. Activity data from councils were available from 17 councils, totalling 784 wards, giving just under a 10 per cent sample. In total, records for 76,325 users were downloaded. In practice, this data had three limitations. First, only an indication of service use, rather than intensity of use, was available for the majority of cases. Second, for only 7 councils were *pre-care* addresses provided for those that had moved into care homes, although this did account for 565 wards of the 784. Since we are interested in the associating activity and cost to commissioning councils the pre-care address is required for costing purposes. In order not to lose many wards from the sample – especially since the community based care services data were available for these wards – a synthetic process was used to allocate care home activity to these non pre-care address wards, alongside the community care activity. This is described below. Third, some data downloads do not cover all services, and in a number of cases there were some issues about whether all clients were included. We can assume nonetheless that downloads were made on the same basis for all wards within the CSSR. This allows multi-level estimations techniques to be used to address potential inconsistencies between CSSRs.

Table 7 describes the councils in the sample along with the number of wards and their population. The coverage of council types was reasonable: 3 shire counties, 3 metropolitan districts, 5 unitary authorities, 3 inner London and 3 outer London CSSRs.

Table 7: Councils in the small area sample

CSSR	Wards	Population 65 plus
Newcastle	26	41370
Durham	135	81550
Manchester	33	52006
Stockport	21	47011
Shropshire	106	51197
Derby	17	35910
Milton Keynes	23	21276
Southend	17	30742
Hammersmith	16	17342
Lambeth	21	24616
Southwark	21	25355
Croydon	24	42601
Hounslow	20	24368
Redbridge	21	33503
Bournemouth	18	34280
Poole	16	28054
Hampshire	249	201135

Total service numbers for each service type were derived by summed over individual users at ward level. Gross weekly unit costs per service recipient were used to calculate total service expenditure for each ward. Because to some degree local unit costs are influenced by the council (e.g. differences in efficiency in commissioning practices) national average unit costs were applied using the latest DH unit cost figures (see table 8).

Table 8: Unit costs

Service	Weekly unit cost per user (£s)
Day care	57
Home care	95
Direct payments	130
Care homes – personal care	376
Care homes – nursing care	381

Hence:

$$\text{totcost} = 57 \times \text{daycare} + 130 \times \text{dirpay} + 95 \times \text{domcare} + 376 \times \text{CHPC} + 381 \times \text{CHNC}$$

CHPC = care home personal care
CHNC = care home nursing care

The relatively high care home (with personal care) cost is due to the relatively high cost of in-house providers. The data set did not identify provider type. There is an argument that in-house provision might have inefficiently high costs. However, the counter argument is that in-house homes do tend to offer a somewhat different service to different people. In any case what drives the results is the relative difference between care home and community-based care costs.

As noted above a number of records did not have a pre-care address (217 of 784 wards). In effect care home activity for these wards was missing (but community-based care service data were not). As a result care home service activity was interpolated for this quarter or so of observations by synthetic regression. In particular, a regression on needs and cost characteristics was undertaken on the 565 observations with pre-care addresses and this was used to predict a value of the missing care home data. These predicted values were added to community-based care costs to determine a total cost for these 217 wards. For the 565 other wards, observed not predicted values were used.

A very small number of wards did not include any recipients of council social care (7). In order to ensure all CSSR wards were included these wards were given a zero service cost.

5.2 Analyses

Previous analysis and the relevant academic literature point to several categories of needs variables. Benefits data with Attendance Allowance indicating care need and Pension Credit also acting as a proxy for a low-income effect. Age is a strong determinant of service use. Tenure is indicative of income and accommodation-related needs. Household composition serves as a proxy for informal caring.

In addition service use is influenced by local input costs and supply characteristics. Potential bias could arise if these are not taken into account. For this reason, a *demand* function was estimated with a service 'price' indicator as an explanatory variable. This price was derived as the service weighted local unit cost (deflated by the ACA to account for input cost differences) over the service weighted national cost:

$$\text{price} = \frac{\left(UC_{DC} \times \text{daycare} + UC_{DP} \times \text{dirpay} + UC_{HC} \times \text{domcare} + UC_{CP} \times \text{CHPC} + UC_{CN} \times \text{CHNC}\right)/\text{ACA}}{57 \times \text{daycare} + 130 \times \text{dirpay} + 95 \times \text{domcare} + 376 \times \text{CHPC} + 381 \times \text{CHNC}}$$

CHPC = care home personal care
CHNC = care home nursing care

Since price is potentially endogenous, it was estimated using instrumental variables (see below).

There were three potentially important characteristics of the data that influenced how the cost equations were to be estimated. First, as noted above, the data have a multi-level structure with 784 wards grouped into 17 CSSRs. To account for potential inter council effects (including potential differences in data download processes), a random effects model was employed. Second, the inclusion of a 'price' variable required an instrumental variables approach (two stage least squares). Finally, cost data often have a rightward skew i.e. a relatively small number of very high cost cases. This was evident in the current data in total cost per ward terms, but was not unreasonably high. Also, when costs were expressed as a rate of population 65 plus, no skew was observed.

5.3 Results

Two models were estimated. The first was with variables expressed as rates per head of population 65 plus. The second was with variables as total numbers (of people, claimants etc.). Table 9 and table 10 report respectively the estimation results. The variable names are as follows. Where the variables are rates, "p65" is appended to the name. Descriptive statistics for the sample are provided in table 11.

totncost4	Total service cost derived at national average unit costs
price	As above
aanum	Attendance Allowance claimants
renting	Rented households (all rent sectors) - people over 65
one_pers	One person households - people over 65
pcnum1	Pension Credit claimants
pop90	Population over 90

Aside from interpolation of the care home data as described above, there were 9 missing values for data relating to household type for people over 65. This reduced the actual estimation sample to 775 for the 'rates' model. The total numbers model used household date for pensioners (not people over 65) and there was only one missing value in this case.

Table 9: Estimation of expenditure per ward as a rate per head of population 65 plus

```
EC2SLS random-effects IV regression             Number of obs      =       775
Group variable: la_id                           Number of groups   =        17

R-sq:  within  = 0.4443                         Obs per group: min =        16
       between = 0.4130                                        avg =      45.6
       overall = 0.4246                                        max =       249

                                                Wald chi2(6)       =    589.12
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

------------------------------------------------------------------------------
totncost4p65 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       price |  -12.11476   5.020976    -2.41   0.016    -21.95569   -2.273825
    aanump65 |    21.0775   4.835913     4.36   0.000     11.59928    30.55571
  rentingp65 |   4.076295   1.475627     2.76   0.006     1.184118    6.968471
 one_persp65 |   5.459387   2.411193     2.26   0.024     .7335346    10.18524
   pcnum1p65 |   16.39326   1.883825     8.70   0.000     12.70103    20.08549
    pop90p65 |   72.97528   7.636193     9.56   0.000     58.00861    87.94194
       _cons |   10.51869   4.949439     2.13   0.034     .8179669    20.21941
-------------+----------------------------------------------------------------
     sigma_u |  2.4096097
     sigma_e |  3.8606088
         rho |   .2803512   (fraction of variance due to u_i)
------------------------------------------------------------------------------
Instrumented:   price
Instruments:    aanump65 rentingp65 one_persp65 pcnum1p65 pop90p65 aca
                wage_avsq wage_md area areasq density
```

Table 10: Estimation of total expenditure per ward

```
EC2SLS random-effects IV regression             Number of obs      =       783
Group variable: la_id                           Number of groups   =        17

R-sq:  within  = 0.7451                         Obs per group: min =        16
       between = 0.7286                                        avg =      46.1
       overall = 0.7900                                        max =       249

                                                Wald chi2(7)       =   2263.57
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

------------------------------------------------------------------------------
   totncost4 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       price |  -20920.07   6509.713    -3.21   0.001    -33678.88   -8161.271
      aahnum |   34.78488   5.740282     6.06   0.000     23.53414    46.03563
        llsi |   4.613162   .5872782     7.86   0.000     3.462118    5.764206
     onepers |   1.653024   .3906766     4.23   0.000     .8873116    2.418736
      pcnum1 |   11.78031    1.50891     7.81   0.000     8.822899    14.73772
      p85pls |   1133.634    122.912     9.22   0.000     892.7311    1374.537
     whitepc |   3820.214   1400.659     2.73   0.006     1074.973    6565.454
       _cons |   14272.23   6563.448     2.17   0.030     1408.107    27136.35
-------------+----------------------------------------------------------------
     sigma_u |  2815.0723
     sigma_e |  2796.6788
         rho |  .50327765   (fraction of variance due to u_i)
------------------------------------------------------------------------------
Instrumented:   price
Instruments:    aahnum llsi onepers pcnum1 p85pls whitepc aca wage_avsq
                wage_md area areasq
```

Table 11: Descriptive statistics of ward level variables

Variable	Cases	Mean	Std Dev	Min	Max
price	775	0.972498	0.091609	0.690767	1.294773
aanump65	775	0.136473	0.042089	0.028736	0.26178
rentingp65	775	0.300505	0.177516	0.016246	0.879819
one_persp65	775	0.344378	0.076846	0.146342	0.694215
pcnum1p65	775	0.281585	0.138189	0.03876	0.829493
pop90p65	775	0.039662	0.017604	0	0.137667
pop65	775	1020.835	618.8209	41	3386
totncost4p65	775	12.3814	5.592521	-0.714067	33.04225
totncost4p65 (pre-care only)	565	11.28311	4.918021	1.273196	28.56871

The above estimations are used to construct formulae for predicting service costs on the basis of identified needs factors. The first equation (in rates) is:

Total level spend per head 65 plus =		£s	
Attendance Allowance claimants - rate per head pop 65+	×	33.260	+
Rented households (all rent sectors) - rate per head pop 65+	×	6.432	+
One person households - rate per head pop 65+	×	8.615	+
Pension Credit claimants - rate per head pop 65+	×	25.868	+
Population over 90 - rate per head pop 65+	×	115.153	+
(Constant)		-1.993	

This can be applied at CSSR level using the rates as described for the CSSR to derive a total spend per head 65 plus. Total spend is then derived by multiplying by CSSR population 65 numbers.

The second equation is:

Total level spend =		£s		
Attendance Allowance claimants - num	×	56.635		+
Number with limiting long-standing illness – num	×	7.511		+
Number of one person households - num	×	2.691		+
Pension Credit claimants - num	×	19.180		+
Population over 85 - rate per head pop 65+	×	1845.74	× num of wards	+
(Constant)[1]		-4157.41	× num of wards	

Total spend is derived directly by applying total CSSR numbers for the first four variables. Population over 85 enters as a rate and so is scaled from ward to CSSR level by multiplying through by the number of wards in the CSSR (at the time of the analysis). Similarly the constant was derived by ward and so needs to be multiplying through by the number of wards. An exemplification of the second equation is given in Appendix B.

Appendix A

Individual analysis data collection design

The relative numbers of admissions and of individuals receiving home care planned for the study, 1200 and 600 respectively, were based on the relative gross expenditure on care homes and home care, and the overall size of the study was based on budgetary considerations. National statistics on local authority supported residents in care homes indicated that a sample of 15 local authorities would yield the required number of admissions, after allowing for refusals and incomplete data. The survey of home care clients would then be undertaken in the same local authorities.

Selection of CSSRs

An initial sample of 25 authorities was selected from the 148 local authorities in England with responsibilities for social services, excluding the City of London and the Isles of Scilly. The 148 local authorities were stratified according to the proportion of non-white individuals among the population aged 75 and over, and by type of authority (county councils, London boroughs, metropolitan districts and unitary authorities). The strata were ordered geographically, and a systematic sample was selected from each stratum: 10 of the 28 authorities with high ethnic minority populations and 15 of the 120 authorities with low ethnic minority populations were selected. Of these 25 local authorities, 14 agreed to participate, including 5 of the high ethnic minority stratum and 9 of the low ethnic minority stratum. In order to increase the number of admissions to care homes and improve the representation of counties, the ODPM approached the counties that were not selected for the original sample to recruit additional volunteers, and two further counties were recruited. The recruitment of additional authorities had little effect on increasing admissions of older people in ethnic minorities.

Admissions to care homes

The number of expected admissions to care homes was based on three months of admissions (two months for late starters), from the 2003-04 statistics on supported residents admitted to permanent care (Department of Health, 2004b). However, the number of admissions identified by the participating authorities was much lower than the expected number and the fieldwork had to be extended to compensate for this. In addition, the collection of financial information for individuals was based on the financial assessment by the local authority, which would follow the care assessment. In consequence, the survey did not yield sufficient cases for analysis in time for the current report. Fieldwork is continuing in order to generate a larger dataset for analysis for the full report in September 2005.

Home care recipients

The home care study was conducted in 13 of the 16 local authorities. One authority required that selected service recipients opt-in to the survey, rather than be given the choice to opt out, and one of the two additional counties declined to participate. In addition, one of the other counties withdrew from the home care survey during the fieldwork period. A 50 per cent response rate was assumed for the survey, but several authorities experienced much higher levels of opting out. In some authorities the sample

size was increased, and a further sample was drawn in three authorities. As in the survey of admissions, the collection of financial information from local authorities has been delayed and fieldwork is continuing to generate a more complete dataset.

Within each local authority, home care clients were stratified by the intensity of the service they received: non-intensive (up to 10 hours per week) and intensive (over 10 hours per week). Calculations based on sampling theory and the available statistics on home care (Department of Health, 2004a) suggested that equal-sized samples of non-intensive and intensive home care recipients were appropriate for the survey. The sample of clients was selected systematically from each stratum. The selection of home care clients was based on the number of individuals receiving home care. However, in some authorities sampling in proportion to the number of clients resulted in rather small or rather large numbers of individuals, and the selected number was adjusted to produce at least 30 respondents, with the maximum number adjusted downwards to yield an overall sample of 600 cases. The calculated numbers were then doubled, on the assumption of a 50 per cent overall response rate. Although the initial sample was selected on the assumption of a 50 per cent response rate, several authorities experienced much higher levels of opting out. This was slightly higher for individuals in the intensive stratum, but not substantially so. The sample numbers were increased where local authorities agreed. For the analysis, the home care respondents have been weighted appropriately to represent those receiving intensive and non-intensive home care services.

Continuing fieldwork

In order to maximise the number of completed questionnaires for analysis for the final report, PSSRU has taken over the fieldwork from NOP.

In relation to the survey of admissions to care homes, as we report in the main text, for the analysis full (both needs and financial) data were available for 338 cases. The data collection is ongoing and full information is now available for 547 individuals. In total 998 people have provided consent for their information to be used. Efforts are being made to obtain outstanding information for all those who have given their consent. In addition, the participating authorities have been asked to provide information about the total number of admissions during the period that they participated. From those that have supplied this to date it is clear that a high proportion of cases (over half) were not identified during the fieldwork period. Councils are being asked whether they can indicate why this is. The analysis in the final report will be based on the data collected from this survey, instead of the data from the 1995 survey and include the results of our discussions with the councils about omitted admissions.

The interviewing stage of the home care survey has been completed, but outstanding financial information is being collected from the local authorities that agreed to provide this. Once this exercise has been completed, data should be available for 397 individuals. In addition to the finance information, information about the home care users who refused to be interviewed is being collected from the participating authorities in order to examine the representativeness of the sample, and this will be discussed in the final report.

Appendix B

Predicted total expenditure – small area analyses model 2

Laname	Cssrcode	Aahnum	Llsi	Oneper	P8589pc	P90pc	Wardcnt	Pcnum	Predcost
Cumbria	102	8905	97706	62824	1.38	0.73	168	21400	1771513
Northumberland	104	4795	64154	37831	1.37	0.68	120	15350	1104086
Gateshead	106	2585	45717	28176	1.18	0.54	22	13315	799380
Newcastle-upon-Tyne	107	3585	55962	39101	1.29	0.59	26	16340	1024136
North Tyneside	108	2550	41787	28027	1.26	0.67	20	12045	752837
South Tyneside	109	2425	35998	21438	1.13	0.54	20	11040	655669
Sunderland	110	4325	67530	34137	0.98	0.47	25	18925	1170000
Hartlepool	111	1110	21590	11413	0.98	0.47	17	6155	348620
Middlesbrough	112	1650	30081	17042	0.95	0.43	23	8230	486070
Redcar & Cleveland	113	1690	32437	16031	1.17	0.52	22	7870	510603
Stockton-on-Tees	114	1790	35438	20485	0.95	0.43	30	8910	545272
Durham	116	7180	121024	60612	1.19	0.58	135	30555	1946403
Darlington	117	1085	19974	13441	1.35	0.68	24	5225	338012
Barnsley	204	2970	55054	25760	1.16	0.56	22	12300	865344
Doncaster	205	3715	65773	32755	1.12	0.50	21	15145	1058548
Rotherham	206	3145	55610	27828	1.14	0.50	22	13845	911382
Sheffield	207	5905	105815	68761	1.40	0.67	29	31000	1899092
Bradford	209	4655	86486	51991	1.17	0.60	30	25705	1519476
Calderdale	210	1810	35322	24661	1.36	0.63	18	9445	606624
Kirklees	211	3225	69910	48121	1.17	0.60	24	18590	1172444
Leeds	212	6340	128647	95451	1.25	0.64	33	33420	2201158
Wakefield	213	4195	70697	37439	1.11	0.48	21	15445	1139915
East Riding	214	3525	56888	35403	1.45	0.73	26	14745	1001545
Kingston-upon-Hull	215	2385	50318	35106	1.18	0.53	23	16235	895861
North East Lincolnshire	216	1735	30019	18832	1.29	0.64	15	9245	542813
North Lincolnshire	217	1495	29365	17375	1.22	0.58	17	7990	491047
North Yorkshire	218	6480	97316	66122	1.55	0.80	173	22290	1735490
York	219	1950	30064	23529	1.36	0.70	22	6415	514802
Bolton	304	3595	53084	33047	1.17	0.55	20	13675	933895
Bury	305	2260	34264	21507	1.19	0.62	16	8180	587065
Manchester	306	4955	84507	65478	1.10	0.51	33	26265	1556225
Oldham	307	2925	44064	25918	1.16	0.55	20	11105	759351
Rochdale	308	2370	42330	25339	1.05	0.54	20	10990	706700
Salford	309	3550	49312	34588	1.22	0.60	20	13940	915937
Stockport	310	4015	50298	36525	1.34	0.64	21	11645	916276
Tameside	311	3095	44457	27889	1.20	0.56	19	11715	791690
Trafford	312	3395	37241	28220	1.28	0.63	21	8745	702403
Wigan	313	4535	67308	34639	1.02	0.42	24	15765	1122005
Knowsley	315	2275	37103	17572	0.81	0.36	22	10580	613792
Liverpool	316	6960	108271	69386	1.12	0.51	33	31415	1958784
Sefton	317	5395	62839	35747	1.48	0.79	22	16230	1185749
St Helens	318	2880	41665	20167	1.06	0.47	18	9650	691420
Wirral	319	5780	70336	43077	1.52	0.72	22	17055	1298196
Cheshire	320	8625	117251	77340	1.27	0.64	163	24540	1946467
Halton	321	1520	25440	13101	0.88	0.40	21	6005	389910
Warrington	322	2210	34177	21454	1.03	0.49	22	7690	557363
Lancashire	323	16140	228926	137149	1.33	0.69	258	53310	3913299
Blackburn w Darwen	324	1980	27846	16006	1.04	0.51	23	7150	471686

Blackpool	325	2515	36184	23261	1.65	0.84	21	9865	675241
Warwickshire	404	6640	84795	58698	1.27	0.60	105	20085	1482050
Birmingham	406	13765	192023	129701	1.20	0.55	39	59385	3673796
Coventry	407	4280	55848	38312	1.21	0.54	18	15865	1052588
Dudley	408	4455	58265	33806	1.19	0.53	24	17575	1094431
Sandwell	409	4880	61448	35066	1.19	0.53	24	20770	1207080
Solihull	410	2405	32577	21261	1.22	0.58	17	7785	573237
Walsall	411	4025	51790	27663	1.12	0.49	20	16165	977737
Wolverhampton	412	3455	50079	30837	1.25	0.58	20	15820	942650
Staffordshire	413	11110	148004	83368	1.11	0.54	174	33635	2416500
Stoke-on-Trent	414	3335	57522	32512	1.19	0.53	20	13790	953269
Herefordshire	415	3065	31435	21271	1.51	0.75	40	7470	610779
Worcestershire	416	7355	90433	59146	1.36	0.66	121	21755	1618846
Shropshire	417	4565	50793	32578	1.45	0.76	106	12665	961950
Telford and Wrekin	418	1900	28446	16551	0.93	0.40	33	6730	438708
Lincolnshire	503	8200	125104	73440	1.39	0.68	188	33065	2174593
Northamptonshire	504	6725	97651	70646	1.10	0.54	150	24335	1602052
Derbyshire	506	11375	147894	85400	1.31	0.63	179	33815	2527779
Derby	507	3365	42862	28846	1.26	0.58	17	11130	790685
Leicestershire	508	6755	94171	61561	1.21	0.58	133	21955	1563857
Leicester	509	2560	52500	36179	1.16	0.59	22	16795	938415
Rutland	510	335	4945	3377	1.37	0.72	16	960	78820
Nottinghamshire	511	9775	149452	86078	1.25	0.61	156	30755	2384293
Nottingham	512	3245	53687	43571	1.12	0.53	20	14670	963426
Hertfordshire	606	11890	145618	115758	1.23	0.60	193	32300	2548074
Norfolk	607	10920	154279	100242	1.68	0.85	205	40745	2932478
Oxfordshire	608	5430	80939	65302	1.25	0.63	137	16985	1321804
Suffolk	609	9000	114292	80719	1.54	0.75	175	28865	2149797
Bedfordshire	610	3530	54543	40710	1.10	0.50	75	12510	868328
Luton	611	1605	28213	20371	0.87	0.42	19	7360	465048
Buckinghamshire	612	3995	61328	46812	1.27	0.70	108	12175	988605
Milton Keynes	613	1675	29104	22488	0.78	0.37	23	6285	447735
Bracknell Forest	614	605	12864	11739	0.82	0.41	18	2610	178572
West Berkshire	615	990	17911	14076	1.05	0.54	30	3585	260563
Reading	616	820	19315	17397	1.17	0.53	16	4420	306800
Slough	617	680	17013	12434	0.84	0.37	14	4240	254149
Windsor & Maidenhead	618	915	16803	15160	1.29	0.64	23	3490	272081
Wokingham	619	810	16426	12963	0.90	0.48	25	2600	213750
Essex	620	15330	215471	152477	1.35	0.64	267	51345	3754937
Southend	621	2260	30680	25007	1.98	1.06	17	8085	605521
Thurrock	622	1270	23016	16012	0.85	0.40	20	5455	355518
Cambridgeshire	623	5790	80771	60180	1.28	0.64	123	18380	1372256
Peterborough	624	1915	26285	19652	1.03	0.50	24	6855	458253
Camden	702	1550	31317	42217	0.89	0.47	18	8330	566751
Greenwich	703	1620	37230	34002	1.13	0.52	17	9000	616615
Hackney	704	1755	36641	34805	0.70	0.39	19	10415	627276
Hammersmith & Fulham	705	925	24228	30385	0.87	0.40	16	6235	406717
Islington	706	1470	31414	36305	0.71	0.34	16	8750	549232
Kensington & Chelsea	707	970	21625	38454	1.04	0.54	18	5380	401705
Lambeth	708	1295	38313	44924	0.70	0.33	21	10675	639386
Lewisham	709	1425	38823	37413	0.95	0.47	18	9985	636856
Southwark	710	1565	38201	39509	0.78	0.36	21	10750	644965
Tower Hamlets	711	1560	33714	30573	0.59	0.25	17	11350	597237

Wandsworth	712	1405	34822	42288	0.92	0.48	20	9470	605103
Westminster	713	1280	26773	44914	1.02	0.49	20	7685	514459
City of London	714	70	956	2623	1.39	0.36	25	155	
Barking & Dagenham	716	2285	32552	20713	1.17	0.57	17	8080	568554
Barnet	717	3025	45948	39751	1.46	0.78	21	10545	825196
Bexley	718	1955	34061	25763	1.29	0.57	21	6900	553025
Brent	719	1720	41099	28948	0.87	0.42	21	11155	660668
Bromley	720	2600	44443	38806	1.44	0.74	22	8645	748377
Croydon	721	2230	48663	46069	1.08	0.56	24	10530	790632
Ealing	722	2015	45401	36055	0.96	0.45	23	10945	726329
Enfield	723	2775	44197	34681	1.28	0.67	21	10770	777315
Haringey	724	1515	33590	33053	0.76	0.40	19	9435	569710
Harrow	725	2115	30783	20705	1.43	0.71	21	7350	543336
Havering	726	2555	38477	25618	1.30	0.58	18	8890	660790
HIllingdon	727	1995	36162	27694	1.19	0.54	22	7380	579471
Hounslow	728	1215	31681	25383	0.93	0.44	20	7715	490484
Kingston-upon-Thames	729	945	19067	19740	1.35	0.68	16	3690	314067
Merton	730	1105	25875	25351	1.14	0.57	20	5510	410818
Newham	731	2315	42249	31251	0.66	0.31	20	11485	705495
Redbridge	732	2580	38906	26852	1.24	0.61	21	8835	664470
Richmond-upon-Thames	733	1075	21346	27043	1.40	0.69	18	4195	369060
Sutton	734	1440	26617	25273	1.37	0.68	18	5405	446438
Waltham Forest	735	2000	36110	29727	1.09	0.55	20	9545	624967
Isle of Wight	803	1890	29149	18052	2.07	1.11	48	7575	602032
Surrey	805	9120	143171	122472	1.48	0.77	206	25570	2409274
West Sussex	807	8000	126678	96617	1.98	1.08	145	27995	2416528
Dorset	809	4475	75080	48388	2.11	1.03	125	16620	1469998
Bournemouth	810	1905	32768	25481	2.23	1.32	18	8930	636979
Poole	811	1365	25535	17042	1.88	0.97	16	5985	447408
Hampshire	812	10565	185267	129186	1.32	0.68	249	36630	2922883
Portsmouth	813	1670	32554	25871	1.41	0.68	14	7825	554611
Southampton	814	1800	37900	31465	1.25	0.57	16	9290	636708
East Sussex	815	6665	97459	69712	2.33	1.32	101	22515	1989860
Brighton & Hove	816	2135	44925	45046	1.71	0.91	21	11400	812486
Wiltshire	817	3655	65261	47409	1.39	0.70	120	14555	1067964
Swindon	819	1480	27476	21080	0.98	0.47	22	6735	443522
Kent	820	13360	229609	153797	1.44	0.74	283	54365	3894841
Medway Towns	821	1745	38984	26879	0.90	0.43	22	8820	595692
Cornwall	902	6030	106036	64530	1.74	0.91	121	27560	1926786
Gloucestershire	904	5050	91164	69909	1.51	0.73	142	21890	1575489
Somerset	905	5855	90130	61180	1.81	0.91	144	21605	1712418
Isles of Scilly	906	5	278	239	1.39	0.79	5	65	3593
Bath & North East Somerset	908	1625	26787	21698	1.57	0.78	37	6420	481427
Bristol	909	4245	67739	54004	1.29	0.61	35	17690	1211081
North Somerset	910	2515	34915	23325	1.77	0.96	36	7890	650525
South Gloucestershire	911	1980	35696	24374	1.04	0.52	35	7780	550340
Devon	912	8560	133756	86890	1.89	1.00	201	32745	2586028
Plymouth	913	2675	49546	32921	1.33	0.66	20	11215	817661
Torbay	914	2455	29867	19340	2.34	1.41	15	8660	622985

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