

# Are different forms of care-management for older people in England associated with variations in case-mix, service use and care-managers' use of time?

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## **ABSTRACT**

This paper reports one component of an evaluation of the different forms, types and models of local authority social services' care-management for older people that have emerged in England since 1993. It was undertaken at a time of a growing debate about whether care-management differentiated those with simple from complex needs, and whether for the latter a multi-disciplinary approach was required. A sample representative of different approaches to care-management was selected from a national survey of local authorities to explore the associations between types of care-management and case-mix, the services received by the clients, and the use of staff time. The paper addresses the categorisation of the types of care-management and the differences associated with these. The care-management teams were distinguished by whether they used a 'targeted approach', had 'specialist older people's teams', or used other arrangements. It was found that those with a targeted approach undertook more multi-disciplinary assessments, provided more assistance to older people with mental health problems, and that their staff spent significantly less time in direct contact with users and carers. Conversely, those with specialist older people's teams had more users in receipt of occupational therapy services. Further research is required to explore the influence of these different arrangements on the wellbeing of service users and their carers.

**KEY WORDS** – care-management, case-mix, service use, use of staff time.

## **Background**

### *The development of care-management*

The origins of care-management were in North America, where it developed as part of the shift in the balance of care from institutional to community settings (Davies and Challis 1986; Fisher 1990–91; Huxley *et al.*

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1990; Challis 1994). Its development was linked to the search for cost-effective alternatives for people with complex needs who required long-term care. Of particular significance were, first, the family of 'Channelling Projects', commissioned by the United States' federal government, designed to link those requiring long-term community care to the appropriate services (Kemper *et al.* 1988), and secondly, a series of evaluations carried out by the *Personal Social Services Research Unit* (PSSRU) in the United Kingdom (Challis and Davies 1986; Challis *et al.* 1995, 2002a, 2002b). Under the wider community-care reforms embodied in the White Paper, *Caring for People* (Cm 849 1989), in 1989 it became British government policy for local authority social-services departments to develop care-management systems. The change was formalised in the supplementary community-care provisions of the *National Health Service and Community Care Act 1990* that were implemented in 1993.

The policy was driven principally by the budgetary pressures of an ageing population and by funding anomalies that had favoured the placement of older people in residential and nursing homes and dissuaded the provision of care in people's own homes. After 1993, however, the lack of explicit guidance resulted in the wide interpretation of care-management by the social-services agencies. Research and development studies have identified four significant factors that contribute to the success of care-management: specialisation, targeting, budgetary devolution, and a multi-disciplinary approach, by which was meant the extent to which *National Health Service* (NHS) staff acted as care-managers (Challis and Davies 1986; Challis *et al.* 1995, 1998, 2001a, 2002a, 2002b). These four attributes are examined in turn.

### *Specialisation*

Specialisation in care-management is a focus on specific user groups rather than a generic process for all users. Evidently older people, or older people with mental-health problems, may be such groups. In the United Kingdom (UK) prior to 1993, a trend away from generic working towards specialisation was noted in local authority social-services departments at both team level and in the case-loads of individual staff (Challis and Ferlie 1987). Means and Smith (1994) noted that both the *Children Act 1989* and *National Health Service and Community Care Act 1990* encouraged the move towards specialist teams. Lewis and Glennerster's (1996) review of the implementation of the community-care legislation in five local authorities during 1992–94 also noted the trend, but subsequently a national study indicated that less than one-half of English local authority social-services departments had specialist teams for older people (Challis *et al.* 1999).

Nevertheless, an inspection of services for people with dementia noted that quality care was often associated with the development of specialist services and good collaborative working arrangements between local authority and NHS staff (Department of Health 1997*a*). Indeed, the high prevalence of cognitive impairment amongst older people in the community (Rait *et al.* 2005) suggests that access to specialist services is vital both for the early diagnosis of dementia and for the provision of appropriate care, and that generic forms of service provision would be inadequate for those with severe cognitive impairment. In addition, there are indications that specialist teams for older people are a precursor to the development of intensive care-management, and should include staff from both health-care and social-care backgrounds (Challis *et al.* 2001*b*; Department of Health 2001*a*).

### *Budgetary devolution*

Budgetary devolution is part of the nexus of arrangements by which budgets are assigned to staff at different levels in the organisation. Its elements range, for example, from budgetary control being vested in senior managers, to systems that permit care-managers to purchase services within specified cost limits. The guidance that accompanied the community-care reforms was not prescriptive on the matter, and its absence was significant in the development of care-management for older people for two reasons. First, it was found that devolved budgets provided a more flexible response to needs when complex packages of care were required (Audit Commission 1996), and second, devolved budgets were a common feature of the early research and development studies of intensive care-management in England. These noted, for example, that explicit unit-costs enabled care-managers to make informed choices that took into account the likely costs and benefits of alternative courses of action, *e.g.* as between five-hours home-care or attendance at a day-centre (Challis and Davies 1986). However, a national study of care-management undertaken five years after the introduction of the reforms found that it was relatively uncommon for all, or even a significant component, of care packages to be costed (Challis *et al.* 1999; Weiner *et al.* 2002). Current care-management arrangements for older people in England are not, therefore, characterised by the capacity of care-managers to purchase individually-costed services within a specified budget, and more commonly they are required to purchase or negotiate care from limited options, with the result that there is insufficient focus on the needs of individual older people (Department of Health 1997*b*, 2001*a*). It is of interest, therefore, that devolved budgets in the form of 'Individual Budgets' (Cm 6499 2005), which are transparent to the person requiring services but

may be held by the local authority, have recently been proposed as a way of enhancing choice and control for the individual.

### *Targeting*

Research and development studies have also demonstrated the importance of a differentiated response, such that care-management could be targeted on frail people who are at risk of institutional care (Challis 1999). Targeting in care-management is the process by which vulnerable adults with complex needs receive the level and forms of care they require, which of course differ from those with less complex needs. In this sense, targeting begins with the initial assessment. From the outset, however, the White Paper *Caring for People* (Cm 849 1989) implied that care-management should be applied to everybody who required community care, but following its implementation, the tendency was observed for care-management to be provided to all users rather than targeted on complex cases (Department of Health 1993*a*, 1994). Research has confirmed this observation, for approximately one-half of the managers that responded to a national survey indicated that no targeting took place (Weiner *et al.* 2002).

With specific reference to older people's services, since the inception of the community-care reforms, the value of differentiating simple and complex assessments has been repeatedly emphasised (Department of Health 1997*b*, 1998; Social Services Inspectorate (SSI) 1997). The 'Single Assessment Process', which is being promoted among NHS staff, specifies four types of assessment: contact, including basic personal information; overview; specialist; and comprehensive. This is consistent with the development of a differentiated approach to care-management and is particularly important in developing a service that responds to the needs of vulnerable older people with complex health and social-care needs. At the outset, it was anticipated that a comprehensive assessment would be the most appropriate for this group of people, since it was specified as a prerequisite for placement in a care-home or for intensive community support. Thus, in England targeting has become integral to the assessment of frail older people's needs.

### *The multi-disciplinary approach*

Multi-disciplinary working incorporates various approaches, including specialist contributions to assessment, assessments by staff other than social-care professionals, and the direct involvement of health-care staff throughout the care-management process. Policy and practice guidance has increasingly emphasised the importance of multi-disciplinary assessment

(Department of Health and Social Services 1991; Social Services Inspectorate and Social Work Services Group 1991 *a*, 1991 *b*; Department of Health 1997 *c*, 2001 *a*, 2002 *a*; Scottish Executive 2000). A study of assessment documents for United Kingdom older peoples' services reported little integration of health-care and social-care information (Challis, Carpenter and Traske 1996; Stewart *et al.* 1999), even though many have argued the importance of a clinical contribution to the assessment process (Brocklehurst *et al.* 1978; Peet *et al.* 1994; Sharma *et al.* 1994; Challis *et al.* 2004).

Many appraisals of care-management have emphasised the importance of inter-agency collaboration (Department of Health 1993 *a*, 1993 *b*, 1994, 1995 *a*, 1995 *b*, 1995 *c*, 1996, 1997 *b*), but while a few small-scale partnerships have been reported, social services and primary health-care services have generally continued to work in parallel (Department of Health 1997 *a*, 1999). The recent emphasis on preventative and rehabilitation services has highlighted the importance of co-ordinating health-care and social-care inputs in all the core tasks of care-management (Cm 4818-I 2000; Department of Health 2001 *b*, 2001 *c*). There is now some evidence that partnerships have developed in both the planning and delivery of services, and that they span the traditional social-care/nursing divide, and consider the older person's needs as a single entity (Department of Health 2001 *a*, 2002 *b*). On the other hand, a national survey of care-management revealed that in only one-fifth of local authorities did NHS staff undertake care-management, and that there was considerable variation in the nature and extent of the arrangements (Weiner *et al.* 2002, 2003). It is therefore likely that, in the majority of cases, older people's needs continue to be addressed from the perspective of a single agency through the social services care-management process.

### *Key questions*

Four broad questions are examined in this paper. First, are different types of care-management associated with measurable differences in case-mix? Second, do variations in approaches to needs assessment relate to case-mix? Third, are different types of care-management associated with variations in the receipt of services by older people? Lastly, to what extent is the allocation of care-managers' time related to the type of care-management?

### **Methods**

This account of the methodology deals with the categorisation of care-management arrangements, the recruitment of the study authorities, data collection and the analysis. The categories were derived from the data

TABLE 1. *Categories and recruitment of local authorities in England by care-management arrangements, 1997–8*

Category	Targeting	Care-management arrangements			Recruited local authorities		
		Specialist older people's team	NHS staff act as care-managers	Purchasing authority at first tier or below	First selection	Final selection	Number
1	Yes	Yes	Yes	Yes	B		7
2	Yes	Yes	No	Yes	C	A B C	15
3	No	No	No	No	D	D	8
4	No	Yes	No	Yes	G	E G	14
5	Yes	No	No	Yes	F	F	18
6	No	No	No	Yes	A E		16

*Notes:* In addition to the 78 tabulated authorities, 23 had other configurations of their care-management arrangements, and 30 did not respond to the survey.

gathered by a survey of all 131 local authority social-services departments in England in 1997–8. It used two postal questionnaires and achieved a response rate of 77 per cent (Weiner *et al.* 2002). Four dichotomous indicators identified different types of care-management, which had been developed *a priori* on both substantive and practical criteria and informed by previous literature, current policy and data availability. The four types were: the existence of specialist old-age teams; the targeting of resources explicitly for different levels of need; the level in the organisation at which the authority to purchase services was held; and whether NHS staff acted as care-managers. Six categories of care-management were developed from combinations of these four indicators. At least five per cent of the authorities were found in each of the six categories, and in aggregate they accounted for 77 per cent of those that replied (Challis *et al.* 2001 *b*).

#### *The recruitment of authorities and data collection*

One authority was selected from each of the six categories and invited to participate in the research. Every effort was made to recruit authorities whose care-management procedures reflected their categorisation. It was also deemed important that the participants reflected the different types of local authority (counties, metropolitan boroughs, London boroughs and new unitary authorities). Authorities that had Joint Reviews around the time of the survey were not approached. The participating authorities are shown in Table 1, which reveals that just four of the original categories were represented that it was not possible to recruit to two of the categories. Moreover, three authorities changed their organisational practice and category at the point of conducting the survey. Nevertheless, the participating

authorities captured 71 per cent of the authorities initially represented in the six categories and 55 per cent of the questionnaire respondents.

Data collection was in three phases between April and December 2000. The first involved collecting case-file data about service users and the services they received, the second was a diary study of care-managers' time use, and the third involved interviews with both senior managers responsible for the strategic management of the service and first-line service managers. Data from the first two phases have been used for this paper. Initially it was planned to include the case-files of consecutive new referrals of older people for care-management from 4 January 2000, or as soon as possible thereafter. The inclusion criteria were:

- The client had had an assessment, had a care plan and was eligible for review.
- The client was in receipt of, or had received for at least two weeks, domiciliary or day-care purchased or provided by the local authority.
- The client was the responsibility of a long-term care team.

Between 50 and 60 cases were selected from each authority. Data collection was by means of a *pro forma* developed by PSSRU that had been used in previous research (Challis *et al.* 2000). Information was extracted on the service-users' characteristics, including dependency data, the variety and level of services received, and the contributors to the care-management process. The service-user's ability to undertake six activities of daily living (ADLs): bathing, dressing, toileting, transferring, continence and feeding were collected, and the aggregate score was used as a summary measure of dependency (Katz *et al.* 1963). In addition, any evidence in the case files of problems with communication, cognitive skills, behaviour and short-term memory problems was recorded, and variables created for short-term memory impairment, level of cognitive skills for daily-living tasks, communication difficulties, and problematic behaviour (evidence of wandering, physical or verbal abuse or anti-social acts). A summary measure, evidence of any mental-health problem, was used as an explanatory variable in the regressions. Evidence in the case files of the use of health and social services was also recorded. The time-use diary instrument had been successfully used in previous studies of a community mental-health team for older people and a social-services department (Weinberg *et al.* 2003). It involved the completion of a daily diary-sheet by 61 care-management staff over one week.

#### *Data analysis*

Two criteria were employed in the analysis: evidence of targeting and the existence of specialist older people's teams. The other two criteria were

redundant, in that no authority with NHS staff acting as care-managers could be recruited, and budgetary devolution turned out to be a poor differentiator of the authorities, because a number indicated that it was highly variable through the year (Weiner *et al.* 2002). The data were analysed by the seven participating authorities – those in the final selection detailed in Table 1 and the two criteria of specialisation and targeting noted above. For convenience, the latter are referred to as *authority types* in the subsequent analysis. It can be seen that there were three local authorities with both targeting and specialist old people's teams (A, B, C); two with specialist old people's teams and no targeting (E, G); one with targeting and no specialist old people's teams (F); and one with neither of these criteria (D).

Differences in case-mix, multi-disciplinary assessment and service receipt between individual authorities were explored using either Pearson's chi-squared test (for categorical data) or one-way analysis of variance (for continuous data), with a Bonferroni *post hoc* test where relevant. Differences between *authority types* were explored using Pearson's chi-squared test (for categorical data) or Student's *t*-test (for continuous data). To determine the simultaneous effects of *authority type*, dependency and multi-disciplinary assessment on the dependent variables, multiple logistic regression (for categorical data) and linear ordinary least-squares regression (for continuous data) were employed, using forward-stepwise entry of significant variables. In determining the predictors of service use, control terms representing clients' living situation ('living with carer' and 'living in sheltered accommodation') were also used. For logistic regressions, odds ratios (OR) are presented (ratios exceeding 1.0 demonstrate a positive effect, and lower ratios a negative effect); for linear regressions, beta coefficients are given (where a negative value represents an inverse relationship). Both parameters are presented with 95 per cent confidence intervals and, where appropriate, adjusted for all significant factors. Because of the relatively few cases in each authority (six to 12) for the diary study, the Kruskal-Wallis non-parametric test of significance was used to determine differences between authorities in the numbers of hours spent by care-managers on the different activity types. To investigate differences between *authority types*, parametric tests of significance (*t*-tests and two-way analysis of variance) were used when the cases were grouped.

## Results

### *Characteristics of the service users*

Neither the age nor the gender distributions of the clients differed significantly among the local authorities (Table 2). The profile of the whole



TABLE 2. Characteristics of the clients in the selected local authorities

Characteristic	Sampled local authorities							Total	p
	A	B	C	D	E	F	G		
Age (years):									
Mean	81.4	84.3	81.5	84.6	81.9	83.3	84.0	82.9	ns
Standard deviation	7.9	6.0	6.9	7.7	6.9	6.7	7.7	7.2	
Range	65-97	72-100	66-96	66-97	67-92	67-99	67-98	65-100	
% 75+ years	76	96	78	88	82	90	88	85	0.051
Gender									
% female	78	78	65	80	64	68	76	73	ns
Ethnic origin									
% white	85	98	no data	88	98	no data	100	92	0.042 <sup>1</sup>
Living situation									
% sheltered accomm.	15	30	39	30	16	10	16	23	0.002
% living with carer	28	28	25	16	48	44	32	32	0.008
Sample sizes	54	50	60	50	50	53	50	367	

Note: 1. Monte Carlo simulation was used to compensate for low cell frequencies.

sample is comparable to that of another drawn for a study of community services for vulnerable older people that was conducted sometime after the community-care reforms in different authorities (Bauld *et al.* 2000). Tables 3 and 4 reveal that the mean dependency score, based on six activities of daily living, differed significantly by local authority ( $F=2.91, p=0.009$ ) although not by *authority type*. Chi-squared tests indicated that *authority type*, in terms of the targeting of services, was associated with significantly different proportions of service users with dependencies related to mental-health in old age (cognitive skills and communication problems).

*Multi-disciplinary assessments*

Three types of assessment were explored and are reported in Tables 4 and 5, those conducted variously by an occupational therapist, a member of a primary-care team, and a member of a secondary-care team. All three types of assessment varied significantly by authority. An occupational therapist’s assessment was recorded in between 12 and 40 per cent of an authority’s care plans ( $\chi^2=17.0, p=0.009$ ); primary health-care team assessments, usually by either a general practitioner or a district nurse, varied from zero to 23 per cent in different authorities ( $\chi^2=13.1, p=0.042$ ); and secondary health-care staff or specialist assessments varied between 10 and 46 per cent of cases ( $\chi^2=31.6, p<0.001$ ). The latter were significantly more common in the *authority types* that had evidence of targeting. Stepwise regression techniques were used to determine the relative

TABLE 3. Case-mix, assessment, recorded use of services and care-managers' time use by authority

Attribute	Local authority						
	A (n = 54)	B (n = 50)	C (n = 60)	D (n = 50)	E (n = 50)	F (n = 53)	G (n = 50)
<b>Levels of dependency in care-management services' caseloads:</b>							
Dependency score							
Mean <sup>1</sup>	2.2	2.4	1.5	2.2	2.2	2.1	1.4
Standard deviation	1.9	1.8	1.3	1.5	1.5	1.4	1.5
Problem areas %:							
Short-term memory	29	57	51	44	41	33	37
Cognitive skills	48	61	45	46	31	47	39
Communication	22	30	27	21	12	41	16
Behaviour	11	30	22	22	14	18	12
Any of above, <i>i.e.</i> old-age mental health problems	46	68	58	52	46	50	45
<b>Involvement of professionals other than social workers in the assessment process (% cases):</b>							
Occupational therapy	12 <sup>2</sup>	40 <sup>2</sup>	38 <sup>2</sup>	16	22	25	30
Primary care	10	18	23 <sup>2</sup>	14	0 <sup>2</sup>	14	13
Secondary care	12	22	46 <sup>2</sup>	10	16	16	13
<b>Percentages of cases with recorded use of care and health services:</b>							
<b>Homecare</b>							
Social services department	9 <sup>2</sup>	20 <sup>2</sup>	88 <sup>2</sup>	60	78 <sup>2</sup>	62 <sup>2</sup>	14 <sup>2</sup>
Independent	85 <sup>2</sup>	82 <sup>2</sup>	12 <sup>2</sup>	60 <sup>2</sup>	6 <sup>2</sup>	24 <sup>2</sup>	64 <sup>2</sup>
Any	93	96	90	96	78 <sup>2</sup>	94	78 <sup>2</sup>
Mean home-care visits/week	10	13 <sup>1</sup>	12 <sup>1</sup>	13 <sup>1</sup>	8	7 <sup>1</sup>	10
<b>Day-care</b>							
Social services department	7 <sup>2</sup>	22	15	26	34 <sup>2</sup>	13	22
Independent	11	4*	18	6	2	2	10
Day hospital	0	10	10 <sup>2</sup>	2	4	6	0
Any	17	30	38	32	42	30	32
Community nursing	18	18	17	26	16	13	20
CPN service	2	6	17	10	6	8	12
Occupational therapy	15	2 <sup>2</sup>	8	10	4	0 <sup>2</sup>	30 <sup>2</sup>
<b>Mean number of hours of care-managers' time spent per week on different types of activity:</b>							
Direct contact with user/carer	5.6 <sup>3</sup>	5.5 <sup>3</sup>	7.0 <sup>3</sup>	10.7 <sup>3</sup>	10.6 <sup>3</sup>	4.9 <sup>3</sup>	9.7 <sup>3</sup>
Service contact	18.0 <sup>3</sup>	12.4 <sup>3</sup>	10.4 <sup>3</sup>	15.4 <sup>3</sup>	18.2 <sup>3</sup>	10.1 <sup>3</sup>	15.5 <sup>3</sup>
Social-services procedures	9.2	18.4	10.6	10.3	7.2	9.8	8.9
Travel	1.4	3.0	2.8	3.7	2.8	2.8	2.7
Total weekly hours recorded	34.2 (n = 7)	39.3 (n = 6)	30.9 (n = 7)	40.1 (n = 12)	38.8 (n = 8)	28.1 (n = 12)	36.9 (n = 9)

Notes: 1. Significantly different mean values by authority (ANOVA  $p < 0.05$ ; Bonferroni *post hoc* test).  
 2. Significantly different proportions by authority (chi-squared  $p < 0.05$ ; |adjusted residual| > 1.96).  
 3. Significant differences in amount of time spent on different activities by authority (Kruskal-Wallis test  $p < 0.05$ ).

TABLE 4. Case-mix, assessment, recorded use of services and care-managers' time use by authority type

Attribute	Targeted (n = 217)	Not targeted (n = 150)	Older people's team (n = 264)	No older people's team (n = 103)
<b>Levels of dependency within care-management services' caseloads:</b>				
Dependency score				
Mean	2.0	2.0	1.9	2.1
Standard deviation	1.6	1.6	1.7	1.4
Problem areas %:				
Short term memory	43	40	43	39
Cognitive skills	50*	38*	45	47
Communication	29*	16*	21	29
Behaviour	20	16	18	20
Any of above old-age mental-health problems	55	48	52	51
<b>Involvement of professionals other than social workers in the assessment process (% cases):</b>				
Occupational therapy	29	22	28	21
Primary care	16	9	13	14
Secondary care	24*	13*	22	13
<b>Proportions (%) of cases with recorded use of care and health services:</b>				
Homecare				
Social services department	46	51	43	61
Independent	46	43	49	42
Any	93*	84*	87*	95*
Mean home-care visits/week	10	10	11	9
Day-care				
Social services department	14	27	20	19
Independent	9	6	10	4
Day hospital	6	2	5	4
Any	29	35	32	31
Community nursing	17	21	18	19
CPN service	8	9	9	9
Occupational therapy	6*	15*	12*	5*
<b>Mean hours of care-managers' time spent per week on different types of activity:</b>				
Direct contact with user/carer	5.6*	10.4*	7.9	7.8
Service contact	12.3*	16.2*	15.1	12.8
Social services procedures	11.5	9.0	10.5	10.1
Travel	2.7	3.1	2.6	3.5
Total weekly hours recorded	32.1*	38.8*	36.0	34.1
	(n = 32)	(n = 29)	(n = 37)	(n = 24)

Significance level: \*  $p < 0.05$  for difference between either targeted vs. non-targeted approach or older people's team present vs. absent. All based on chi-squared test except analysis of care-managers' time use, which used Student's *t*-test.

effects of *authority type* and differences in the assessment process on case-mix (Table 5). There were three findings of note: first, access to an occupational-therapy assessment was significantly related to dependency; second, secondary-care assessments were significantly related to clients with mental-health problems; and finally, once differences in the assessment

TABLE 5. *Stepwise-linear (dependency score) and logistic (mental-health problems) regressions of case-mix by authority type and multi-disciplinary assessment*

	Authority type		Assessment		
	Targeted	Older people's team	Occupational therapy	Primary care	Secondary care
Dependency score	ns	ns	$p < .001$ B = 0.75 [0.36, 1.14]	ns	ns
Existence of any old-age mental-health problem	ns	ns	ns	ns	$p < 0.001$ OR = 4.18 [2.04, 8.57]

Note: The 95% confidence interval is given in square brackets.

process were taken into account, *authority type* was not a significant predictor of case-mix.

#### *Home-care services*

Tables 3 and 4 present the proportions of the older users of care-management services in the different authorities and *authority types* that used various health and social services (as recorded in their care plans). The mean number of home-care visits per week is also given. In total, 328 clients (89%) received home-care. Individual authorities differed not only in the economic mix of home-care provision, but also in the proportion of the clients who received home-care services (chi-squared = 20.2,  $p = 0.003$ ). The difference in the economic mix contrasts with the finding of another survey of English local authorities, which suggested that the independent sector provided more than two-fifths of all local authority funded care (Wistow and Hardy 1999). Our data also suggest that, in some cases, service users received domiciliary care from both the social-services department and the independent sector. Chi-squared tests indicated that significantly more users received home-care services both in *authority types* that used a targeted approach and in those without specialist older people's teams. The intensity of home-care, as measured by the number of home-care visits per week, did not differ by *authority type*.

Table 6 demonstrates the simultaneous effects of dependency, *authority type* and multi-disciplinary assessment on both the use of home-care services and the number of recorded home-care visits per week. Use of home-care was significantly greater in *authority types* with targeted systems of care-management, even when the significant effect of dependency was controlled, and interestingly was inversely related to a secondary health-care

TABLE 6. *Stepwise multiple linear (visits/week home-care) and logistic (other service use) regression analyses of service use by dependency, authority type and multi-disciplinary assessment*

Service	Dependency		Authority type		Assessment			Controls
	Dependency score	Any old-age mental-health problem	Targeted approach	Older people's team	Occupational therapy	Primary care	Secondary care	
Mean home-care visits/week	$p < 0.001$ B = 2.69 [2.08, 3.30]	ns	ns	ns	ns	$p < 0.001$ B = 5.70 [2.94, 8.46]	ns	Lives with carer $p < 0.001$ B = -4.10 [-6.14, -2.07]
<b>Use of:</b>								
Home-care	$p < 0.001$ OR = 2.29 [1.62, 3.24]	ns	$p = 0.006$ OR = 3.21 [1.40, 7.36]	ns	ns	ns	$p = 0.023$ OR = 0.34 [0.13, 0.86]	Lives with carer $p < 0.001$ OR = 0.13 [0.05, 0.31]
Daycare	ns	$p < 0.001$ OR = 3.78 [2.21, 6.45]	ns	ns	ns	ns	ns	ns
Community nursing	$p = 0.001$ OR = 1.36 [1.14, 1.63]	ns	ns	ns	ns	$p = 0.005$ OR = 2.93 [1.39, 6.16]	ns	ns
CPN service	$p = 0.001$ OR = 0.38 [0.22, 0.67]	$p = 0.010$ OR = 9.69 [1.73, 54.3]	ns	ns	ns	ns	$p < 0.001$ OR = 24.9 [7.26, 85.2]	Lives in shelt. housing <sup>1</sup> $p = 0.001$ OR = 8.80 [2.53, 30.6]
Occupational therapy	ns	ns	$p = 0.009$ OR = 0.37 [0.17, 0.76]	$p = 0.035$ OR = 2.92 [1.08, 7.91]	$p = 0.013$ OR = 2.57 [1.22, 5.42]	ns	ns	ns

Note: The 95 % confidence interval is given in square brackets.

assessment. The only significant factors predicting the intensity of home-care visits per week were dependency and evidence of a primary-care assessment. Whether or not the service-user lived with a carer was, as expected, significantly but inversely related to both the receipt of home-care services and their frequency, and was therefore controlled for in these equations.

#### *Day-care and community-health services*

Three types of day-care services were investigated: social services provision, independent-sector provision, and NHS day hospitals, which together accounted for 116 (32%) of the sampled clients. Although some authorities made significantly different use of these types of day-care, there were no significant differences in the proportion of the clients who received day-care (Tables 3 and 4). Tests of the simultaneous effects on the use of day-care of the different dependencies, authority types and the presence or absence of specialist assessment revealed that the only significant factor was mental ill-health problems (Table 6).

Use of community-nursing services was recorded in 67 (18%) of the case files, but no significant differences between authorities or *authority types* were found (Tables 4 and 5). Using stepwise logistic regression to assess the simultaneous effects of the explanatory variables, dependency and primary-care assessments were the only two significant predictors of the use of community-nursing services (Table 6). Only 32 (9%) of the case files recorded the use of community psychiatric nurse (CPN) services, even though over one-third of the sampled clients had two or more problems associated with dementia, and again the percentage did not vary significantly among the authorities or by *authority type* (Tables 3 and 4). Table 6 shows that mental-health problems and specialist secondary-care assessment were significant predictors of the use of CPN services. Dependency had a negative effect. Living in sheltered accommodation was significantly related to the use of CPN services, as has been noted in another study (Manthorpe and Alaszewski 2002), and was controlled for in the equation.

Turning to occupational therapy, again only a minority of clients (36 or 10%) received this service, but its use varied significantly by authority ( $\chi^2 = 35.8$ ,  $p < 0.001$ ). In terms of *authority type*, it was significantly lower in the authorities that used a targeted approach ( $\chi^2 = 6.77$ ,  $p = 0.009$ ), and significantly higher in those with specialist older-people's teams ( $\chi^2 = 3.97$ ,  $p = 0.046$ ). A logistic regression of the simultaneous effects of dependency, *authority type* and assessment confirmed that the clients in the authorities that used a targeted approach were less likely to receive occupational-therapy services, while those in authorities with specialist teams were more

likely to receive the services (Table 6). Unsurprisingly, an occupational-therapy assessment was associated significantly with receipt of the service, but there was no association with dependency.

### *Care-managers' time use*

The mean and total number of hours spent by care-managers on four types of activity during the study week, by authority and *authority type*, are presented in Tables 3 and 4. For this purpose, service contacts included gathering information from health-services staff, paperwork regarding service users and carers, and negotiating with and arranging health and social services for the service-user or their carer. Social-services procedures and organisational commitments included administration, reading departmental documents, attending team meetings, and dealing with general telephone enquiries. Two other categories were included in the analysis: direct contact with the service-user (or carer), and travel. Differences in the total recorded hours mainly arose from the variable presence of part-time staff, but they were statistically insignificant (Kruskal-Wallis,  $\chi^2 = 10.4$ ,  $p = 0.109$ ). The total hours in the authorities that used a targeted approach were, however, significantly fewer than in those that did not (*t*-test,  $p = 0.01$ ). This should be borne in mind when interpreting these data. The authorities that operated targeted systems of care-management (A, B, C and F) exhibited significantly less direct contact between care-managers and service-users or their carers (Kruskal-Wallis,  $\chi^2 = 20.7$ ,  $p = 0.002$ ). Furthermore, care-managers in all these authorities, except A, spent less time on service contacts (Kruskal-Wallis,  $\chi^2 = 17.2$ ,  $p = 0.008$ ). Care-managers in Authority B recorded a disproportionately large amount of their time undertaking social-services procedures, but this was not statistically significant.

To investigate the simultaneous effects of a targeting approach and of a specialist older-people's team on the managers' time-use, a two-way analysis of variance was performed. To take account of the significantly fewer total hours in the targeted authorities, this measure was included as a covariate. It was found that care-managers in the authorities with targeting indeed spent less time in direct contact with service users and their carers ( $F = 13.4$ ,  $p = 0.001$ ), but the approach was no longer a significant predictor of service contacts, as defined above. Taking the fewer hours in the average working week into account, however, care-managers in the authorities with targeting spent significantly more time on social-services procedures ( $F = 12.6$ ,  $p = 0.001$ ). Authority B was among this group, and appeared to have more bureaucratic systems in place, but even when B was removed from the analysis, the association held.

## Discussion

### *Limitations of the study*

Researching policy and its impact on health and social services is, by default, hampered by the constantly changing policy background, and this feature was pronounced at the time of the research (Audit Commission 1997; Department of Health 1997*c*; Cm 4169 1998). As Table 1 shows, recruitment to some of the categories was problematic, reflecting the rate of change in local authority social-services departments at the time. Most disappointing was the inability to recruit authorities for which NHS staff acted as care-managers, a key feature of the integration of health and social services. For the purpose of the analysis, budgetary devolution failed to differentiate adequately between the seven participating authorities (discussed further below). Despite this, the simple typology used in the analysis clearly identified authorities that exemplified two enduring aspects of British old-age social-care services, targeting within care-management and specialisation (Department of Health 2002*a*, Weiner *et al.* 2002).

Given this study's limited resources, it was impossible to gather user information from a larger sample of local authorities of each *authority type*. Thus, despite every effort being made to ensure that selected authorities were robust examples of the care-management arrangements in their *authority type*, questions must remain as to whether the measured differences were attributable to the factors under investigation or to other factors, such as the local service culture, practices and circumstances. A further difficulty was to ensure that the sample of case files produced by each authority met the original inclusion criteria. The unavoidable differences in case selection employed by the authorities reflected their different data-management systems – some were more sophisticated than others. Nonetheless, there were no indications of any systematic bias.

In gathering the information about the service-users, we were mindful of the variable detail in the case files. Data were available on the level of dependency, but there was insufficient detail to construct a 'gold standard measure' of either cognitive impairment or depression. As a result, only broad-brush indicators of the presence of problems typically associated with poor mental health were collected. Despite these drawbacks – which are inherent to research in such settings – this study has provided the first tentative evidence that differences in the organisation of care-management services for older people in England are associated with service-delivery outcomes. Moreover, we believe that the findings have a level of face validity that would be recognised by both practitioners and academic researchers.



TABLE 7. *Summary of findings***A. Authorities with a targeted approach**

More users with cognitive-skills deficits and communication problems (Table 4).  
 More multi-disciplinary assessments completed with colleagues in secondary health-care (Table 4).  
 More users in receipt of any home-care services (Tables 4 and 6).  
 Fewer users in receipt of occupational-therapy services (Tables 4 and 6).  
 Care managers had less direct contact with users/carers (Table 4).  
 Care managers spent more time on social-services procedures (text).  
 Care managers had less service contact (Table 4; not confirmed by analysis of variance)

**B. Authorities with specialist teams**

Fewer users in receipt of any home-care services (Table 4; not confirmed by regression).  
 More users in receipt of occupational-therapy services (Tables 4 and 6).

**C. Responsibility for assessment**

Primary health-care assessment raised both number of home-care visits per week and use of community nursing service (Table 6).  
 Secondary health-care assessment related to old-age mental-health problems (Table 5) and raised use of community psychiatric-nursing service (Table 6).  
 Occupational-therapy assessment related to dependency score (Table 5) and raised use of occupational-therapy services (Table 6).

**D. User characteristics and service use**

Dependency score associated with use of home-care service, number of home-care visits per week and use of the community-nursing service (Table 6).  
 Old-age mental-health problems associated with: use of day-care and of community psychiatric-nursing services (Table 6).

*Summary of findings*

The results that we have described are complex. For ease of interpretation, the significant findings in relation to *authority type* and those on assessment, user characteristics and service are summarised in Table 7. Individual authority differences are not summarised, since the aim of the analysis was to identify the key determinants of the different types of care-management arrangements. Nevertheless, as Tables 3 and 4 showed, differences between individual authorities were apparent. For example, the mean dependency level and the number of home-care visits per week varied significantly; the latter were significantly fewer in Authority F than in B, C or D. The time spent by care-managers both in direct contact with users and carers and in contact with services varied significantly between authorities (Table 3). It appeared, however, that although there were differences between individual authorities in case-mix, the use of different services and care-managers' use of their time, the differences between *authority types* (as defined in this study) more effectively delineated the types of care-management arrangements. The principal findings are now reviewed in relation to the four concepts that were outlined in the introduction.

### *Targeting*

The findings shed interesting light on the components of care-management, and particularly the correlates and effects of targeting. First, data on user characteristics were collated in respect of physical dependency and evidence of different problems relating to mental health in old age. Interestingly, the dependency of the users were not significantly associated with the type of care-management. The findings for short-term memory problems and level of cognitive skills were significant, however, notwithstanding the fact that the measures were specially designed for this study. This suggests that in authorities with a targeted approach, older people with cognitive impairment were more likely to receive care at home as an alternative to long-term care. Indeed, evidence elsewhere has demonstrated the capacity of intensive care-management to provide home-based care for this group (Challis *et al.* 2002 *b*). More generally, in the authorities that used a targeted approach, a relatively high proportion of users received home-care services. Whilst no measure of the intensity of service provision was available, the authorities that had a targeted approach provided more extensive home-care, and physical dependency, assessment type and living situation were important determinants of the amount (Table 6).

### *Specialisation*

Previous research has shown heterogeneity among ‘specialist teams for older people’ and in the composition of generic adult teams, some of which include specialist old-age staff (Weiner *et al.* 2002). Nevertheless, at the beginning of this research it was anticipated that the presence of specialist older-people’s teams would be an important factor in understanding variations in care-management arrangements and performance. In the first sample of authorities, it was anticipated that three of the seven would provide services to older people through specialist teams, but in the final sample, five of the seven had specialist teams (Table 1). This reflected both the pace of organisational change and the increasing specialisation of services for other user groups. In some cases, specialist older-people’s teams were created by default, as revealed during a preparatory visit to an authority in which a specialist older-people’s team had arisen through the formation of a specialist physical-disability team with three other specialist teams (adults with mental-health problems, older people with mental-health problems and learning disabilities). These findings are consistent with other evidence of the development of specialist teams for older people (Lewis and Glennerster 1996). Indeed, it may be that the lack of clarity about what constitutes a specialist team for older people may

have contributed to the inconclusive findings of this part of the analysis (Table 7).

### *Budgetary devolution*

Budgetary devolution was not included in the analysis of *authority types*. Whilst its importance to effective care-management for vulnerable older people has been demonstrated, the barriers to its development in practice have rarely been made explicit. Tables 3 and 4 detail the eight most frequently specified services in the care plans. Four were funded exclusively by local authorities (home-care and day-care provided both directly and by independent organisations), and three were funded by the NHS (day hospital, community nursing, and CPN services). With regard to those provided by the local authority, it cannot be assumed that all were routinely costed, a necessary pre-requisite to budgetary devolution. A *Social Services Inspectorate* report found that unit-cost information on direct or in-house services tended to be less well developed than in the independent sector (Warburton 1999), and that the costing of services by local authorities is variable (Clarkson, Hughes and Challis 2005). Moreover, for this to influence care-management arrangements, it would also be necessary for the health aspects to be routinely costed. As partnership working develops, through the flexibilities inherent in the *Health Act 1999* and by the formation of NHS care-trusts (that provide integrated health and social care for older people), it will be interesting to note whether the changes bring about more use of cost information by front-line staff. If this occurs, it is possible that budgetary devolution in care-management will become the norm rather than the exception.

### *Multi-disciplinary approach*

To examine a multi-disciplinary approach to care-management, it was decided for two reasons to explore the extent to which NHS staff acted as care-managers. First, it was noted that experimental intensive care-management in the United States has used both social workers and nurses as care-managers, and that similar arrangements were a significant element of one of the early British research and development studies (Eggert *et al.* 1991; Challis *et al.* 2002*a*). Second, data collected from the national survey suggested that this was a small but significant phenomenon (Weiner *et al.* 2002). When recruiting authorities for the study, however, it became apparent that many initiatives were time-limited, and that several operated in only a part of the authority (Weiner *et al.* 2003). It was therefore disappointing that no authority with NHS staff acting as care-managers could be recruited. This continues to be promoted in the guidance

accompanying the 'Single Assessment Process' (Department of Health 2002*a*). Moreover, the emphasis on prevention and rehabilitation in older people's services has resulted in closer working relationships for community nurses with social-services colleagues and, more generally, in a redefined role for occupational therapists in the assessment process (Department of Health 2001*a*). Concurrently, it has also been noted that collaborative working between community psychiatric-nurses and social-services staff has been developing (Department of Health 2001*a*; Weiner *et al.* 2003), and that case management for people with long-term conditions has emerged, with implications for inter-agency work (Department of Health 2005).

Data collection for the multi-disciplinary assessment focused on the principal contributors and the service setting, and particularly distinguished the different involvement of primary and secondary health-care staff. This reflects the existing configuration of NHS services, by which specialist services for older people with mental-health problems are in secondary health-care. By contrast, most health services for older people with physical dependencies are provided by primary health-care. Thus, receiving community psychiatric-nursing services related to existing (or previously diagnosed) old-age mental-health problems, and having had a secondary-care assessment whilst receiving community nursing services was related to physical dependency and the client having had a primary-care assessment.

## **Conclusions**

The purpose of this study was to shed light on the organisational context of care-management for older people in England by examining three of its components: case-mix, service use, and the care-managers' time-use. To identify the defining attributes, four enduring themes were examined: specialisation, budgetary devolution, targeting and multi-disciplinary working. What have we learnt from this? The principal findings are about the factors that are associated with a targeting approach and multi-disciplinary working, rather than budgetary devolution and specialisation or individual responses to assessed need. It has been shown that in authorities with a targeting approach to care-management, the service-users were more likely to have poor cognitive skills and communication problems and to receive home-care services, and it appeared that the care-managers spent more time on agency procedures at the expense of direct contacts with users and carers. The next important step in the research process would be to evaluate the impact of the targeting approach on users and carers. This would require examination of the experiences and quality

of life of users and carers, of the extent to which the approach meets the policy goal of maintaining users in their own homes, and of the costs.

The findings about multi-disciplinary assessment suggest that there had been a move away from the earlier model of single-worker, single-agency care-management (Lewis and Glennerster 1996). It has been demonstrated, for example, that clients with mental-health problems tended to be assessed in secondary health-care, and to receive community psychiatric-nurse services. This suggests that further examination of the correlates and implications of the multiple pathways through assessment and service referral will be both instructive and timely, particularly given the current promotion of the 'Single Assessment Process' (Department of Health 2002*a*). Such research would throw more light on the implications of care-management being undertaken by staff other than social workers. This has particular resonance for current policy developments and the introduction of 'community matrons' and other health professionals as case-managers in community-based care of older people with long-term conditions (Department of Health 2005).

### Acknowledgements

The *Personal Social Services Research Unit* receives funding from the Department of Health. We are most grateful to the local authorities and their staff for their participation in the research. Robin Darton, Scott Geron, Siobhan Reilly, Caroline Sutcliffe and Janine Williamson assisted in the data collection, and Paula Mandall was responsible for data preparation. Responsibility for this paper is the authors' alone.

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*Accepted 26 June 2006*

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