RESEARCH

Care Coordination for Older People in the Non-Statutory Sector: Activities, Time Use and Costs

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Context: Care coordination is one important mechanism to provide effective care at home for frail older people in a world with ageing populations. In England this has usually been undertaken by state funded local authority social care services. The Care Act 2014 promoted greater involvement of the non-statutory sector in the provision of care and support, including care coordination, for older people at home to offer greater flexibility and consumer choice.

Objective(s): To explore how organisations in the non-statutory sector in England undertake care coordination activities, targeting, their staff time use and costs to support older people at home.

Method(s): A case study approach was used involving semi-structured interviews with practitioners in 17 services selected from a national survey in 2015. Estimates of practitioner time use for a typical case, and associated costs for each service were calculated. Data were analysed to identify the range of care coordination activities undertaken, forms of targeting, patterns of staff time use and service costs.

Findings: Two services undertook no targeting activities; of eight care coordination activities only two were undertaken in all services. Costs of care coordination activities varied both within and between services in two distinct settings: hospital discharge and memory services. More time was spent by practitioners in direct contact with service users and carers than on indirect activities in most care coordination services.

Limitations: A case study approach is more difficult to generalise; recall bias may have influenced data on time use and costs from practitioner interviews; some costs had to be attributed using national data.

Implications: Both service setting and gatekeeping mechanisms shaped care coordination activities. Where services were designed to substitute for statutory services their sustainability needs to be addressed in terms of length of contracts, extent of case responsibility and full costing.

Keywords: Older people; care coordination; staff time use; costs; England; non-statutory sector

Introduction

In the developed world people aged 60 and over make up more than 11 per cent of the global population and this is projected to double by 2050 (The United Nations Population Fund [UNPFA] and HelpAge International, 2012). The population over 85 years is expected to rise to 3.4 million by 2040 in England (Office for National Statistics, 2015). Increasing age is likely to be matched by greater frailty and with this comes the requirement for planned, well-organised care to allow older people to continue to live in their own homes. Internationally, care coordination is rec-

ognised as one of the mechanisms to achieve this (Chester et al. 2015; Gauld, 2017). Recently there has been growing interest in developing a greater understanding of its component parts (Schultz & McDonald, 2014).

In the UK the context for understanding community-based care emerged in the 1980s. Following relatively uncontrolled growth of the Care Home sector using public funds during the 1980s (Audit Commission, 1986), a formal review was conducted (Griffiths, 1987). This was followed by a Government White Paper (Department of Health, 1989) culminating in the NHS and Community Care Act 1990. The key aspects of community-based care were seen as: services that respond flexibly and sensitively to the needs of individuals and their carers; increased choice of services offering a range of options; support to foster or maintain independence; and a concentration of resources on those with greatest needs (Department of Health, 1989). As part of these new arrangements case or care management was introduced, with the 1989

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White Paper stating that proper assessment of need and good case management were to be the cornerstone of high-quality care (Department of Health, 1989 para 1.11). A very significant growth in the provision of services, such as home care, in the non-statutory sector was intended and took place in the 1990s. It was assumed that increased competition and greater choice would lead to more personalised services and thereby drive up quality (Audit Commission, 1992) although the evidence for this is weak (Knapp et al. 2001; Stevens et al. 2011; Lewis & West, 2014). As in many other jurisdictions, this policy reflected a desire for cost containment and control of admissions to long term care settings (Kraan et al. 1991; Challis, 1992a, b; Means et al. 2008).

One consequence of the Community Care Reforms of the 1990s was a focus upon those in greatest need, thereby reducing the amount of support available at lower levels of need and raising the eligibility threshold for care and support (Wanless, 2006). The consequent requirement for services to prevent further need and for rehabilitation was highlighted in the 1998 White Paper (Department of Health, 1998). More recently the need for people not in receipt of publicly funded services to have access to information and advice was also recognised (Care Act, 2014).

Building upon the principles of greater choice and influence of those who use services, and upon the existing system of Direct Payments (a cash payment to service users to pay for their own care), a proposal for Personal Budgets (a wider form of Direct Payment) for individual service users was developed (Department of Health, 2005), whether managed by the individual or by others, including care managers, on their behalf (Department of Health, 2008a). Subsequent studies have suggested that older people, in particular, placed less value on self-management of resources than others (Glendinning et al. 2008; Slasberg et al. 2012; Woolham & Benton, 2013; Woolham et al. 2017, 2018) and support by a care manager or coordinator, from either public or non-statutory organisations, was viewed as important by older people in managing their care (Woolham et al. 2017).

From 2010 onwards, against a background of austerity in the UK, the targeting of social care services upon those in greatest need increased, arising from reduced resources and a focus on higher levels of eligibility for care and support (Institute for Government, 2019). Inevitably the role of non-statutory services, and care coordination as part of these, which were once designed to complement the statutory sector, has gradually moved towards that of substitution.

Case/care management or care coordination was introduced to the UK in older people's services following research and pilot studies undertaken by PSSRU (Challis & Davies, 1986; Challis et al. 1995; 2003; 2009). Its origins lie in the immediate need for effective coordination of home-based care, albeit with a broader range of objectives including client-centred care and effective use of resources (Challis, 1992b; 2003). Its importance increases with the degree of fragmentation of care service systems and the separation of funding of case management from that of the provision of care (Challis, 2003). It is seen to retain an important role in long term care in addressing the problem of: '...people being unaware of whom to approach when they have a problem, and nobody having a generalist's "bird's eye" view of the total care and support needs of an individual' (NHS England, 2020).

Moxley (1989) usefully defines case management as: '... a dedicated person (or team) who organizes, coordinates and sustains a network of formal and informal supports and activities designed to optimise the functioning and well-being of people with multiple needs.' (p.17). Nearly all definitions of case management or care coordination involve a set of core tasks (Applebaum & Austin, 1990; BCMH, 1992; Challis, 1992a, b, 1994, 2003; Geron & Chassler, 1994; Moxley, 1989; Rothman, 1992; SSI/SWSG, 1991). Overall, there is a broad general consensus that these core tasks are case-finding and screening (activities associated with referral and targeting); assessment (involving needs identification); care planning (identifying and agreeing how these needs are to be addressed); implementing and monitoring the care plan (ensuring services and support are in place and work effectively); review and closure. On occasions publicity, information and advice services (at the commencement of the process) and brokerage (signposting or recommending ways to put a support plan into practice) have also been included (SSI/SWSG, 1991).

Although care coordination was originally seen as a predominantly statutory sector responsibility (lying within local government), with the advent of personal budgets and austerity in relation to public spending from 2010, there has been marked growth of this role outside the public sector (NAO, 2011). The Care Act facilitated outsourcing of care coordination to the non-statutory sector, with the aim of greater flexibility and efficiency in the delivery of services (Department of Health and Social Care, 2018) following a series of Social Work Practices with Adults (SWPwA) pilots (SCIE, 2013; Manthorpe et al. 2014). The latter were seven independent organisations funded by central government as part of an initiative where local authorities contracted out social work functions that had previously been provided in house.

A scoping review highlighted the limited research on activities undertaken by third sector staff involved in care coordination, the experience of older people using these services, and a lack of evidence on costs and outcomes. It also found that service users tended to value the person-centred practice, informality, and perceived impartiality of third sector services (Abendstern et al. 2018). For the limited number of the studies measuring outcomes, there were improvements in quality of life measures (Schore & Phillips, 2004; Robson & Ali, 2006; Campbell et al. 2011; Dickinson & Neal, 2011). The knowledge and commitment of third sector staff were reported to lead to higher uptake and a more positive service user experience (Campbell et al. 2011; Williams et al. 2014). In BAME communities, good links with the local community (Rogers, 2009) and the employment of staff who spoke locally used languages (Robson & Ali, 2006) were seen as facilitating uptake of third sector services. Statutory sector staff valued the third sector input, which was seen as complementing their own roles (Dickinson & Neal, 2011). The review also highlighted: information sharing problems; perceptions by third sector staff of not being full partners and the

insecurity of funding arrangements. Managers in third sector organisation feared losing their unique qualities of responsiveness and informality with pressure to 'professionalise' the sector (Abendstern et al. 2018).

Reflecting the modest evidence base found in the literature, the aim of this study was to examine the detail of care coordination activities undertaken by practitioners in the non-statutory sector to support older people at home. It was part of a broader mixed methods research project investigating the provision of care coordination for older people in the non-statutory sector in England. The study included: a scoping review of literature and policy (Abendstern et al. 2018); a structured internet search of organisations in the non-statutory sector providing care coordination for older people (Jasper et al. 2016) and a national survey of these organisations (Sutcliffe et al. 2016); the development of a set of care coordination standards relating to both organisational and practice arrangements (Abendstern, et al. 2016a) and fieldwork with a small number of organisations to explicate the range and content of care coordination activities undertaken, investigate the costs and validate the standards (Abendstern et al. 2016b; Jasper et al. 2017; Abendstern et al. 2019). The work reported here is from the fieldwork stage of this project, specifically addressing staff activities, time use and cost. Here eight tasks of care coordination being undertaken in the non-statutory sector were investigated (Abendstern et al. 2018, **Table 1**): referral (addressing case finding and screening by practitioners); assessment, support planning; brokerage (linking service users with information about potential suppliers); implementation; monitoring; review; and closure (SSI/SWSG, 1991; Department of Health, 2008b). In addition, the wider process of targeting was investigated, which addressed not only case finding and screening but also provision of information and advice and publicity (SSI/SWSG, 1991; Care Act, 2014).

Four research questions guided the enquiry:

· How did services target the appropriate clientele?
· Which of the eight steps of care coordination activities were undertaken by services?
· How did practitioners use their time in care coordination?
· What costs could be attributed to these activities?

Methods
Sample
A case study approach involving multiple sites was employed, each focussing on the circumstances, dynamics and complexity of a single service (Bowling, 2014). A three-stage process of site selection was adopted. In the first stage, organisations in England associated with care coordination for older people and their carers at home were identified through web-based searches (n = 294) (Jasper et al. 2016). This process did not identify any 'for profit' organisations. Services came from national organisations providing local services (Age UK, Alzheimer's Society, British Red Cross), with the remainder comprising small locality specific organisations. In the second stage, data about services within these organisations relating

to care coordination were obtained through a postal survey (n = 122, 41% response rate) (Sutcliffe et al. 2016). In the survey the majority of respondents either supported people with dementia/cognitive impairment (46%) or focussed on hospital discharge/prevention (34%) with smaller numbers offering information and advice/brokerage/support planning (15%) or preventative work/practical support (6%). The third stage involved the selection of a smaller number of these organisations to explore in more detail (n = 17). Each selected service had to satisfy two criteria: undertake at least four of the eight care coordination activities and provide support to at least 40 service users, of whom at least half were over 60 years of age. To ensure a range of services, a decision was made to include at least one and a maximum of four services from each of three main national organisations in the sample.

The sample sites were categorised into the following settings: hospital discharge which took referrals from acute hospitals and provided support for people on discharge from hospital (29%; 2, 14, 15, 16, 17); memory services which offered support in the community to people with dementia and their carers and were sometimes linked to NHS memory clinics (24%; 3, 4, 5, 6); preventative work/practical support (35%; 8, 9, 10, 11, 12, 13) which included four SWPwA pilots (8, 9, 10, 11); and information and advice/brokerage/support planning services (12%; 1, 7).

While the sampled organisations represented a diverse array of different care coordination providers in England, this sample was not representative in terms of geographical distribution, organisational size or focus. However, due to the large degree of variation between individual services, a truly representative sample would be almost equal to the entire population, thus the sample can be considered adequate for this case study analysis.

Data collection
Following the selection process and site identification researchers visited the 17 sites and undertook interviews with practitioners between January and May 2015. For each interviewee, care coordination activities constituted their principal work activity. They were nominated by their manager, but participation was voluntary. Each interviewee received an information sheet and completed a consent form prior to taking part. Interviews lasted approximately 45 minutes, were audio recorded and professionally transcribed. A schedule was used at the interview, developed from previous research (Challis et al. 1990, 2008, 2012; Clarkson et al. 2010, 2013). It comprised a number of predetermined questions, firstly regarding how the service provided publicity, information and advice as part of the targeting process to identify cases and secondly regarding the approach to the eight care coordination activities. Each participant was asked to provide detailed information for a typical case within their service regarding: the actual task (what is done); the staff involved (by whom); and the staff time taken (how long). This was recorded on a task pathway document. Information was thus collected on a 'median' case example per service, thereby adjusting for case-mix variance between settings. The focus was therefore on between service rather than within service variation. To capture the latter variation would have required

Table 1: Characteristics of services and methods of targeting.

Site ID	Target Group	Complementary or substitute service	Length of contact*	Number of paid staff	Volunteers (type of task**)	Publicity	Information and advice	Case finding and screening
1	Older people	Substitute	Short-term	Less than 10	Yes (1)	✓	✓	✓
2	Adults and older people discharged from hospital	Substitute	Short-term	10 or more	Yes (1,3)		✓	✓
3	People with dementia	Complementary	Medium term	Less than 10	Yes (1,3)	✓	✓	
4	People with dementia	Complementary	Short-term	Less than 10	No	✓	✓	
5	People with dementia	Complementary	Short-term	Less than 10	Yes (1,3)	✓	✓	
6	People with dementia	Complementary	Medium term	Less than 10	Yes (3)		✓	
7	Adults with disabilities and older people	Substitute	Short-term	Less than 10	Yes (2)		✓	
8	Adults with disabilities and older people	Complementary	Short-term	Less than 10	No		✓	
9	Adults and older people	Substitute	Short and long-term	10 or more	No			
10	Adults with disabilities and older people	Substitute	Long-term	10 or more	Yes (1)			
11	Adults and older people with sensory impairment	Substitute	Short-term	10 or more	Yes (3)		✓	
12	BME*** adults with disabilities and older people	Both	Long-term	Less than 10	Yes (3)	✓	✓	
13	BME older people	Both	Long-term	Less than 10	Yes (3)	✓		
14	Adults and older people discharged from hospital	Substitute	Short-term	Less than 10	Yes (3)	✓		✓
15	Adults and older people discharged from hospital	Substitute	Short-term	Less than 10	Yes (2,3)	✓	✓	✓
16	Adults and older people discharged from hospital	Substitute	Short-term	Less than 10	Yes (3)		✓	✓
17	Adults and older people discharged from hospital	Substitute	Short-term	Less than 10	Yes (2)	✓		✓

* Short-term: up to and including 6 weeks, medium term: 7 to 12 weeks, long-term: 13 weeks or more.

** 1. In an administrative role, 2. As a care coordinator, 3. Part of the support plan.

*** Black and minority ethnic.

✓ is task performed within the service.

a larger representative sample of service users rather than a case study approach as used here. The method has been found to be acceptable and less costly than diary methods (von Abendorff et al. 1994; Weinberg et al. 2003) and also feasible in collecting time use data (Challis et al. 1990, 2008, 2012; Clarkson et al. 2010, 2013). Approval for the study was received from the University of Manchester Research Ethics Committee (ref: 13181).

Data analysis
Targeting
To analyse how services targeted their appropriate clientele a threefold categorisation was employed (Abell et al. 2010). The first category was publicity activities, which included promotional work undertaken to publicise the service, both to the general public and colleagues in other services (SSI/SWSG 1991). The second category related to the provision of information and advice to a broad group of people who may not have an immediate need for care or support (Department of Health and Social Care, 2018). The third category included case finding and screening activities. The former is intended to ensure that a high proportion of users receive a service whereas the latter is designed to increase the likelihood that a high proportion of people with the appropriate characteristics for a service receive it (Applebaum & Austin, 1990; Challis & Davies, 1986). Services were coded to reflect which of these three activities they undertook.

Activities and time use
Information as to which care coordination activities were undertaken in each service, by whom and the amount of time taken for each activity were drawn from the interviews and datasets for time use were prepared and analysed in Microsoft Excel (version 10). To avoid the risk of double counting, if more than one care coordination activity was undertaken in a single contact with the service user each activity was allocated a proportion of the overall length of the contact. For each of the eight care coordination activities, the amount of time spent on direct care compared with indirect care was calculated per case using definitions derived from earlier work (Jacobs et al. 2006). These were updated to reflect current patterns of service delivery, particularly the use of emails and a decreased emphasis on face-to-face assessments. Direct care was defined as contact with the service user, carers and relatives either face-to-face, by telephone or correspondence (email or letter). Indirect care was defined as contact with other services about service users and carers (e.g. negotiating with other agencies on behalf of the service user), and tasks and contacts within the agency associated with their welfare (e.g. office-based paperwork). For the latter a time use per case for each stage of the care coordination pathway was calculated from the interview data. Where this was not available a standardised administration time based upon patterns of working was included. No travel time was included in this analysis.

Costs
The costs for each service for a typical case per week were calculated. Costs were estimated as the marginal costs incurred by the service for each care coordination activity (Knapp, 1984). The estimated length of a typical care episode was provided by the interviewees. Total costs comprised the sum of all individual care coordination activities per care episode, divided by the number of weeks length per care episode. This excluded those activities associated with targeting which occurred prior to care coordination activity, and were overheads borne by the non-statutory sector services. For the purposes of costing, a judgement was made whether each care coordination activity was: undertaken within the same organisation; provided by another organisation in the locality, including the local authority or NHS; or a combination of the two. Where a care coordination activity was not undertaken by the service but was integral to the process, a cost was estimated to reflect the potential interdependence between the statutory and non-statutory sector in delivering the service. Thus, where the statutory sector retained responsibility for certain tasks such as assessment, the additional marginal time use and costs of their inputs were estimated from interviews. Similarly, if a care coordination activity was not part of the pathway for the particular service no costs were included.

Costs were based on the amount of time spent on care coordination activities by practitioners multiplied by the unit cost of their time. As the individual unit costs for each site were not available a common currency was used drawn from a standard source. These prices were derived from unit costs for the year 2014–2015 in UK£ sterling (Curtis & Burns, 2015). Travel, administrative time and indirect costs were based on interviewee data or standardised times in the unit costs and included in the calculation of costs. Travel costs included two components: the amount of time spent travelling; and the mileage/fuel allowance. Where a service used volunteers in the task pathway, their time was costed to reflect the relatively high costs of recruitment and training noted in the fieldwork interviews.

Datasets were prepared and analysed in Microsoft Excel (version 10). Descriptive statistics were used (mean, median and standard deviations) to compare costs between care coordination activities and services. Differences between the two most cohesive and less diverse service settings (hospital discharge and memory services); the function of the service (complementary or substitute for existing provision); and the type of host agency (national or local) were explored.

Results
Service characteristics
Service characteristics are described in **Table 1**. Most services (11, 65%) provided short-term support to older people living at home with only three (18%) providing assistance for 13 weeks or more (10, 12, 13). Two (12%) provided assistance for between seven and 12 weeks (3, 6) and one (6%) provided both short and long-term support (9). A majority of services employed small numbers of paid staff with 13 (76%) employing less than 10 staff. Fourteen (82%) engaged volunteers who undertook a range of tasks. The five hospital discharge services offered short-term (up to 6 weeks) assistance and all engaged the work of volun-

teers. The four memory services offered a mixture of short-term and medium-term (7–12 weeks) assistance and three out of the four services engaged the input of volunteers.

Five services (29%) received referrals from a statutory agency, the local authority adult social care service (1, 7, 8, 10, 12) and five (29%) received them from staff in acute hospitals (2, 14, 15, 16, 17). Four services (24%) received referrals mainly from memory services (3, 4, 5, 6) and three (18%) accepted referrals from family, friends and service users. (9, 11, 13).

Of the 17 services, ten services were identified as delivering a service which might otherwise be provided by a statutory agency (a substitute service). These substitute services were available to people on discharge from hospital (2, 14, 15, 16, 17), two provided specialist assistance in support planning (1, 7), and three were Social Work Practices with Adults pilots (9, 10, 11). Five services were complementary offering different (new or additional) services to those provided by the statutory sector. These were primarily located in memory services (3, 4, 5, 6). The other complementary service (8) was contracted to provide support to people who did not meet the criteria for a statutory assessment. Two services performed both functions (12, 13). These targeted black and minority ethnic groups and were designed to respond to non-complex requests for assistance. Both facilitated access to statutory assessments and assisted in subsequent support planning.

Most services received local authority funding (n = 15; 88%). Of the services which did not, one was a complementary service (5) and one a substitute service (16). Eight services received NHS funding (47%) and of these five were complementary services (3, 4, 5, 6, 8) and three substitute services (2, 16, 17). All services had funding arranged via a contract and one service also received a grant from a national retailer. Host organisations also used their charitable funds on occasions to support these services.

Targeting and entry to the service
The three components of targeting are shown in **Table 1**. Publicity activities were undertaken by just over half of the services (53%). Twelve services (71%) provided information and advice to people who subsequently did not enter the service. Case finding and screening activities were undertaken mainly in services providing support to older people on discharge from hospital. Four services (24%) performed both 'information and advice' and 'case finding and screening' at the point of entry (1, 2, 15, 16). Only two services (12%) undertook all three targeting activities (1, 15).

Care coordination tasks
Table 2 summarises the range of care coordination tasks undertaken by each service. Services are categorised as to whether each task was undertaken by the service itself, by another agency as part of the planned care pathway,

Table 2: Range of care coordination tasks undertaken by services.

Site ID	Length of contact**	Referral	Assessment	Support Planning	Brokerage	Implementation	Monitoring	Review	Closure
1	Short-term	S	S	S	S	N	S	S	S
2	Short-term	S	S	S	N	S	N	S	S
3	Medium-term	S	S	S	N	S	S	S	S
4	Short-term	S	S	S	N	S	S	S	S
5	Short-term	S	S	S	N	S	S	S	S
6	Medium-term	S	S	S	N	S	S	S	S
7*	Short-term	S	O	S	O	O	O	O	S
8	Short-term	S	S	S	N	S	N	S	S
9	Short and long-term	S	S	S	O	S	S	S	S
10	Long-term	O	S	S	O	S	N	S	S
11	Short term	S	S	S	N	S	N	S	S
12	Long-term	S	S	S	O	O	S	S	S
13	Long-term	S	S	S	S	N	N	S	S
14	Short-term	S	S	S	N	S	S	S	S
15	Short-term	S	S	S	N	S	S	S	S
16	Short-term	S	S	S	N	S	S	S	S
17	Short-term	S	S	S	N	S	S	S	S

S = Done within Service; O = Done by another provider outside the service; N = Not part of the care coordination pathway for this service model.

* = Fieldwork revealed that this site only undertook three care coordination activities (referral, support planning and closure), diverging from the survey return which had provided the sampling framework for site selection.

** = Short-term = up to and including 6 weeks; Medium-term = 7 to 12 weeks; Long-term = 13 weeks or more.

or was not part of the care coordination service model. As can be seen one service (7) was found during the fieldwork to only undertake three of the tasks, therefore not meeting one of the inclusion criteria of the study. This information diverged from the survey return which provided the sampling framework for site selection. It reflected a deliberate separation of certain tasks within the same agency where another service took responsibility for other tasks beyond referral and support planning. Most services (16) managed receipt of referrals and undertook assessments, although the content of the latter varied from a detailed needs assessment to a routine risk assessment. All services undertook support planning, but those services providing a brokerage service which provided information about potential suppliers (1, 13) were advisory and did not, as the other services, link this with formal implementation of the support plan. Thirteen services undertook implementation and in two services it was undertaken by another agency (7,12). Most undertook monitoring and review and unsurprisingly, all undertook case closure. Hospital discharge services undertook the full range of care coordination activities with the exception of brokerage and monitoring. Memory services undertook all care coordination activities except brokerage.

Time use

Table 3 depicts the number of minutes and the proportion of time spent on direct and indirect care for each care coordination activity per case. Overall, most time was spent on implementing the care plan, indicating a substantial contribution, and least time was spent on case closure. A distinction was made between direct contact with the service user and carers and indirect care involving negotiation with other agencies and associated administrative tasks. Practitioners spent 60 per cent of their care coordination time in direct contact compared with 40 per cent spent in indirect care. In terms of direct time use practitioners spent most time in support planning (mean = 69 minutes; sd = 60.75) and implementation (mean = 95 minutes; sd = 130.96) and, with the exception of brokerage (mean = 11 minutes; sd = 42.28),

least time on referral tasks (mean = 16 minutes; sd = 12.35). Sixty-four per cent of time on assessment was directly with the service user and carers. Most variation in direct time use was found in relation to implementing the care plan (mean = 95 minutes; sd = 130.95), reflecting differences in the extent to which the care coordinator contributed directly to the achievement of goals specified in it.

Additional analysis was undertaken of the hospital discharge and memory services. Overall, the mean total direct time in minutes spent on a typical case episode in memory services was 222 and in hospital discharge 514. The total indirect time spent was 162 and 176 respectively. In the memory services (ms) most direct time was spent on assessment (mean = 58 minutes; sd = 46.17) and support planning (mean = 78 minutes; sd = 34.91). In comparison with the full sample (fs), in memory services a greater proportion of direct time was spent on referral (ms = 57%; fs = 37%), assessment (ms = 85%; fs = 64%) and reviewing (ms = 80%; fs = 64%) activities. All implementation activities were categorised as indirect time use in memory services, suggesting that practitioners accessed other services rather than provided assistance themselves. In hospital discharge services (hd) most direct time was spent on support planning (mean = 99 minutes; sd = 84.88) and implementation (mean = 290 minutes; sd = 13.78) with less direct time on assessment (mean = 21 minutes; sd = 7.31). In comparison with the full sample (fs), in hospital discharge services a greater proportion of direct time was spent on support planning (hd = 83%; fs = 71%) and implementation (hd = 87%; fs = 68%) but the proportion of direct time on reviewing was less (hd = 56%; fs = 64%).

Costs

Care coordination activities and their associated cost for each service are reported in **Table 4**. Activities which were not undertaken by the service but integral to the pathway were recorded as assumed costs (shaded areas on **Table 4**). There was variation overall and within each activity across the 17 services, with a range in cost per care episode week

Table 3: Time use by care coordination activity by case (n = 2–17 services).

	Referral	Assessment	Support Planning	Brokerage	Imple-mentation	Monitoring	Reviewing	Closure	Total
Direct time*									
n (%)	265 (36.8)	978 (64.0)	1180 (71.1)	195 (23.6)	1610 (68.2)	400 (61.1)	411 (63.7)	351 (57.0)	5390 (59.8)
mean (standard deviations)	16 (12.35)	58 (58.11)	69 (60.75)	11 (42.28)	95 (130.95)	24 (21.54)	24 (14.75)	21 (14.52)	317 (189.42)
Indirect time*									
n (%)	455 (63.2)	550 (36.0)	480 (29.9)	630 (76.4)	750 (31.8)	255 (38.9)	234 (36.3)	265 (43.0)	3619 (40.2)
mean (standard deviations)	27 (20.93)	32 (51.79)	28 (23.39)	37 (121.55)	44 (32.95)	15 (18.63)	14 (13.91)	16 (13.49)	213 (137.52)
Total time*	720	1528	1660	825	2360	655	645	616	9009

* Time use in minutes.

(Contd.)

Table 4: Costs of care coordination by activities and types of services.

Site ID	Referral	Assessment	Support Planning	Brokerage	Implementation	Monitoring	Review	Closure	Episode length (weeks)	Total cost per care episode week
1	£35.00	£122.50	£7.50	£42.50	£0.00	£7.50	£11.25	£12.50	2	£119.38
2	£11.50	£45.15	£26.79	£0.00	£182.43	£0.00	£41.08	£3.22	6	£51.70
3	£17.50	£75.63	£95.63	£0.00	£95.63	£191.26	£10.00	£30.00	12	£42.97
4	£25.00	£10.00	£90.50	£0.00	£32.50	£123.00	£20.00	£8.75	6	£51.63
5	£20.00	£5.00	£83.00	£0.00	£25.00	£108.00	£7.49	£12.50	6	£43.50
6	£12.50	£95.09	£22.50	£0.00	£35.00	£57.50	£20.00	£5.00	12	£20.63
7*	£17.50	£55.33	£114.20	£96.80	£95.63	£12.00	£20.00	£12.50	3	£141.32
8	£19.25	£19.00	£23.75	£0.00	£9.50	£0.00	£9.50	£9.50	6	£15.08
9	£12.50	£121.50	£57.75	£96.80	£44.00	£101.75	£27.88	£14.50	13	£36.67
10	£7.50	£158.70	£51.00	£96.80	£53.50	£0.00	£128.21	£61.88	13	£42.89
11	£10.00	£256.70	£86.25	£0.00	£184.70	£0.00	£33.50	£67.00	3	£212.72
12	£12.50	£153.10	£36.10	£96.80	£74.58	£36.10	£38.60	£38.60	13	£37.41
13	£57.50	£150.60	£93.60	£151.10	£0.00	£0.00	£53.60	£38.60	13	£41.92
14	£19.25	£40.39	£9.75	£0.00	£195.58	£205.33	£43.57	£40.40	6	£92.38
15	£39.25	£17.17	£64.50	£0.00	£143.17	£207.67	£8.17	£5.75	6	£80.95
16	£69.95	£30.27	£65.50	£0.00	£149.83	£215.33	£11.25	£34.25	6	£96.06
17	£53.75	£19.47	£9.17	£0.00	£115.87	£125.04	£9.17	£9.17	6	£56.94
Full sample (n = 17)										
Standard Deviation	£18.67	£70.37	£34.89	£51.40	£67.18	£83.70	£29.39	£19.99	–	£50.38
Mean	£25.91	£80.92	£55.15	£34.16	£84.52	£81.79	£29.02	£23.77	–	£69.66
Median	£19.25	£55.33	£57.75	£0.00	£74.58	£57.50	£20.00	£12.50	–	£51.63
Hospital discharge (n = 5)										
Standard Deviation	£21.55	£11.06	£25.19	–	£28.53	£82.19	£16.12	£15.56	–	£18.16
Mean	£38.74	£30.49	£35.14	–	£157.38	£150.67	£22.65	£18.56	–	£75.60
Median	£39.25	£30.27	£26.79	–	£149.83	£205.33	£11.25	£9.17	–	£80.95

Site ID	Referral	Assessment	Support Planning	Brokerage	Implementation	Monitoring	Review	Closure	Episode length (weeks)	Total cost per care episode week
Memory Services (n=4)										
Standard Deviation	£4.51	£39.57	£29.45	–	£28.30	£47.79	£5.70	£9.58	–	£11.52
Mean	£18.75	£46.43	£72.91	–	£47.03	£119.94	£14.37	£14.06	–	£39.68
Median	£18.75	£42.82	£86.75	–	£33.75	£115.50	£15.00	£10.63	–	£43.23

Notes: Shading indicates assumed costs.

* Fieldwork revealed that this site only undertook three care coordination activities (referral, support planning and closure), diverging from the survey return which had provided the sampling framework for site selection.

between £15.08 and £212.72. **Table 4** also highlights variations in the mean total costs of the full sample (mean = £69.66; sd = £50.38), hospital discharge (mean = £75.60; sd = £18.16) and memory service settings (mean = £39.68; sd = £11.52). The mean costs for assessments within hospital discharge (mean = £30.49; sd = £11.06) and memory service (mean = £46.43; sd = £39.57) settings were lower than that of the full sample (mean = £80.92; sd = £70.37). Mean costs for support planning were highest in memory services (mean = £72.91; sd = £29.45). Costs in hospital discharge settings for implementation (mean = £157.38; sd = £28.53) and monitoring (mean = £150.67; sd = £82.19) were substantially higher than for the full sample respectively (mean = £84.52; sd = £67.18; mean = £81.79; sd = £83.70).

Variations in costs were also present as to whether services were defined as substitute or complementary to mainstream services and, to lesser extent, in national compared with local organisations. The mean total cost of the substitute services was higher (£93.10) than those for services which were complementary (£34.67) or both (£39.76). The average care coordination costs for services run by national organisations were slightly less expensive (mean = £65.61) than the local organisations (£75.43)

but this was due to the inclusion of the memory services which had lower total costs. When these services were excluded the costs for the national organisations were slightly higher (£82.90).

Figure 1 shows the standard deviations (a measure of variation from the sample mean) for the cost per care episode week of each of the activities of care coordination. Variation in service costs in the full sample was high in relation to three activities: assessment, implementation, and monitoring. In memory services low levels of variation in relation to referral (mean = £18.75; sd = £4.51) and review (mean = £14.37; sd = £5.70) were evident. Within hospital discharge services there was little variation in costs associated with assessment (mean = £30.49; sd = £11.06) but a relatively high level in relation to monitoring activities (mean = £150.67; sd = £82.19).

Discussion

The discussion is organised by five themes which emerge from the results of the study: service setting; targeting and entry into the service; balance of time use; costing care coordination activities; and substitutes and complements. A final section addresses limitations and future research. A broad summary of the findings is provided in **Table 5**.
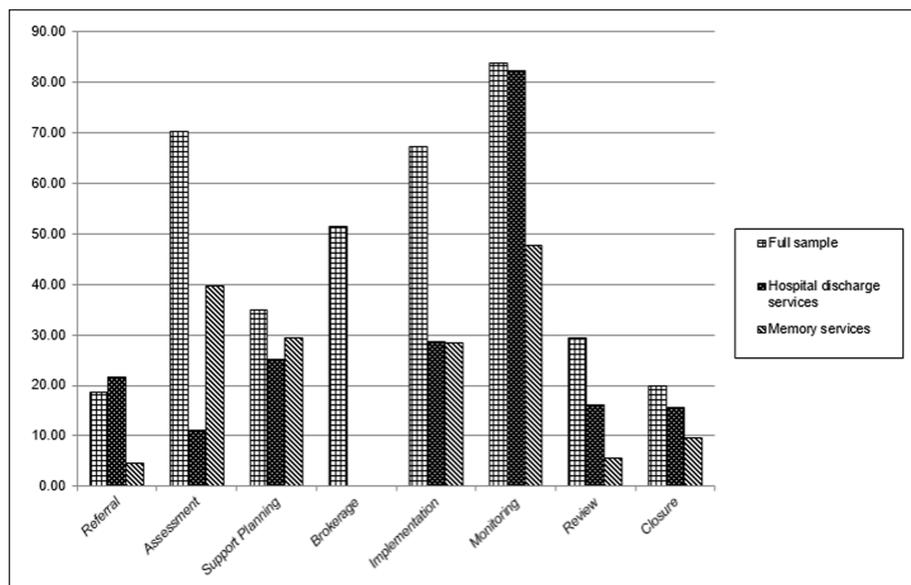

Figure 1: Standard deviations for the costs of each activity of care coordination by service type.

Table 5: Summary of findings.

Care coordination activities	Most publicised their services. A minority provided information and advice and undertook case finding and screening. All services undertook support planning and case closure. Two undertook brokerage. Service settings influenced range and extent of activities.
Time use	Most care coordination time spent with service user and carers. Less time spent on administrative tasks and links with other agencies. Variation within and between settings.
Costs	Considerable variation between services. Costs of specific care coordination activities varied within service settings. Variation of costs was a function of practitioner focus on specific activities. Costs appeared higher for services which were substitutes rather than complementary.

Service setting

This study highlights the range of provision of care coordination in the non-statutory sector, reflecting a variable definition of care coordination permitting its application to multiple populations, clinical settings, and service delivery systems (Schultz & McDonald, 2014). Despite this variety there were some similarities related to different types of service settings, the latter being a feature influencing and shaping practice (Applebaum & Austin, 1990). In the present study the influence of service setting might be reflected in which agency hosts a care coordination service, whether a local organisation or part of a national organisation. Services provided by national organisations appeared slightly less costly than more local ones, possibly indicating the effect of scale. However, since different national organisations tended to focus on different care settings, service users, activities and responsibilities, it is here where differences are more marked than scale. In this study, in both memory services and hospital discharge services evidence of the influence of service setting on practice could be seen, reflecting qualitative evidence from this study (Abendstern et al. 2019). In memory services practitioners spent more time with service users and carers in referral, assessment and reviewing activities. However, in hospital discharge services they spent more time with service users and carers on support planning and implementation activities. This would seem to reflect the requirements of the different service contexts. In a hospital discharge environment, the focus is upon reducing avoidable delay for patient well-being and bed utilisation. The immediate need is for a care plan and to establish home support services, which may often be time consuming (Challis et al. 2014). By contrast, in a memory service, often offering support and advice not long after a formal dementia diagnosis at a memory clinic (Ahmed et al. 2018; Department of Health, 2009), the focus is likely to be on identifying current needs and reviewing how arrangements are working as the person and family adjust to new circumstances and expectations. These differences in requirements shaped by setting are likely to also be reflected in funder requirements specified in the commissioning and contracting processes.

The sample also included four of the seven SWPwA pilots. These were organisationally diverse (Manthorpe et al. 2014), a feature reflected here where both the care coordination activities undertaken and the range of costs per care episode week varied across the four sites. There were considerable variations in assessment, implementation, monitoring and review. However, one similarity was in a lack of involvement in case finding and screening activities, suggesting that this function was retained by the local authority. Such an arrangement can be seen as analogous to that of several other industrially advanced nations whose adult social care systems operate across both statutory and non-statutory sectors (Abendstern et al. 2016a). Thus, it mirrors arrangements where assessment is undertaken by the state and long-term support planning, monitoring and review are undertaken by a separate provider (Tsutsui & Muramatsu, 2005; Australian Government, 2017; Ikegami, 2007; Ikegami et al. 2011; Campbell et al. 2016). Hence processes of eligibility determination, targeting and sometimes resource allocation are retained by funding or commissioning organisations, thereby, from their perspective, ensuring greater efficiency and effectiveness in case and resource allocation.

Targeting and entry into the service

In this study three targeting mechanisms (publicity, information and advice, case finding and screening) were identified as means to both facilitate access to and control the numbers of those who access the service and its capacity to meet their needs (Applebaum & Austin, 1990; SSI/SWSG, 1991). These have been termed as 'Vertical Target Efficiency' (the extent to which those accessing the service are those for whom it was designed) and 'Horizontal Target Efficiency' (the extent to which those needing the service actually access it) (Challis & Davies, 1986). The inclusion of information and advice activities reflected the fact that local authorities in England now have a duty to provide this although it can now be a delegated and shared responsibility with other service providers (Department of Health and Social Care, 2018). Only two services (12%), one a hospital discharge provider, were engaged in all three of these components of targeting, indicating a continuing role of the statutory sector in these activities.

Case finding and screening involve identifying service users who will benefit most and ensuring that they receive a level of response appropriate to their needs following assessment (Abell et al. 2010). They contribute to gatekeeping which entails the implementation of budgetary limitation on the costs of service provision (Applebaum & Austin, 1990). Case finding and screening were mainly undertaken in hospital discharge services, probably reflecting the high specificity of the target population and the need for a speedy response. Elsewhere in the present study these activities were often shared with the statutory sector or were undertaken by the statutory sector prior to the involvement of the care coordination service. As noted previously, where a mixture of statutory and non-statutory services are combined in the care coordination pathway, such as in the Japanese long term care system (Ikegami, 2007), these initial tasks of case finding, screening and determining eligibility tend to remain the responsibility of the statutory sector contributing to efficiency in targeting of services and resources. Hence, the relationship between eligibility, screening, assessment and targeting is often complex and conflated at the point of entry into a service (Stewart et al. 2003).

Balance of time use

In different approaches to care coordination, how staff distribute their time across different activities in a service is of considerable interest. It can be an indication of the type of service provided, the client group, and the caseload size and mix (Diwan, 1999). A literature review of third sector organisations in the non-statutory sector identified that an informal and less bureaucratic approach to care and support, associated with these providers, was valued by both service users and carers (Abendstern et al. 2018). This might suggest that the proportion of direct time in work activities would be higher in these non-statutory sector organisations as found in

this study. An evaluation of the SWPwA pilots (Manthorpe et al. 2014) found staff in both statutory services and the new (non-statutory) SWPwA pilots felt that they should be undertaking more direct time use activities, although the latter did not increase this activity over time (Manthorpe et al. 2014; Teater & Carpenter, 2017). However, data from several studies of time use in older people's services suggests that direct staff time activities range as a proportion of total time from 20 to 28 per cent (von Abendorff et al. 1994; Weinberg et al. 2003; Jacobs et al. 2006, 2011; Delli-Colli et al. 2013), which is markedly lower than the 59.8 per cent found in the present study.

A variety of methods have been employed to collect data on time use. Diary methods are common (Bowling, 2014), time sampling and continuous time and motion monitoring have also been used (Delli-Colli et al. 2013). In the present study a different approach was adopted. Data about undertaking the core tasks of care coordination in each service were collected within semi-structured interviews with practitioners, permitting estimates to be made about direct and indirect time use for a typical case, for each care coordination activity. Each of these approaches has potential biases, such as: error due to respondent fatigue; not recording certain activities, especially if duration is short; inaccuracy in estimating the total time of an activity; and undercounting certain types of activity (Delli-Colli et al. 2013). The high level of direct time use in the present study may in part reflect the method of data collection focusing upon undertaking care coordination at the case level and thereby underestimate the indirect time given to organisation related activities. As a sensitivity analysis, applying the host organisation related time from other studies (25 per cent) to the present data reduces the estimate of direct time to 45 per cent. This remains markedly higher than in the other studies discussed, which were based in the statutory sector. However, the practitioner interviews would suggest that there is some valid difference in patterns of work.

Nonetheless, high levels of direct time should not simply be seen as indicative of greater efficiency or effectiveness. In a study of care managers' workload and service patterns in community mental health services in Sweden, a greater proportion of time spent on indirect interventions was associated with better outcomes regarding symptomatology and social networks, while more time spent on indirect work, such as brokerage activities, intervention planning and skills training, was associated with a greater reduction in the need for care services (Bjorkman & Hansson, 2000). Clearly, comparisons between studies of time use are not straightforward because of differences in study samples, design, settings and the definitions of categories of activity (Webb & Levin, 2000), nor are there definitive markers as to what is an optimal balance between direct and indirect activities. Hence, caution should be exercised in drawing conclusions from comparisons between this and other analyses of practitioner time use.

Costing care coordination activities

A review of care coordination arrangements for older people in the non-statutory sector highlighted the paucity of evidence on costs (Abendstern et al. 2018). Only one paper (Campbell et al. 2011) explored the cost of support planning and brokerage services in three user led organisations for people with a disability but only covering a small minority of older people. These organisations were established to demonstrate how resources could be transferred from the traditional local authority care management systems to new user led support planning and brokerage. Campbell et al. (2011) found that costs for support planning with or without brokerage ranged from £550 to deliver one support plan to £1150 to deliver a support plan and associated brokerage. Estimates of local authority costs appeared to be lower. It is difficult, however, to make any reliable comparisons from this with the present study or with statutory sector costs. The methods for costing are not explicit: costs are not comprehensive; costs do not appear to be standardised for a time period, referring instead to delivering a support plan; and do not compare like with like, as statutory sector services were dealing with a different population of service users (Campbell et al. 2011). Data presented in the present study are primarily focused on older people, and the work is more comprehensive in terms of the range of different settings covered; the detail, range and specificity of cost components included; and the number of care coordination activities included in the analysis. It has provided individual costs for care coordination activities within each service; an overall cost per service per care episode week; and the mean cost of each care coordination activity derived from local data collections. Costs were also included for activities integral to the care pathway but not undertaken directly by the service but by other providers. Nonetheless, certain costs may remain unrecorded. A bottom up approach to costing was adopted and this permitted consideration of appropriate assumptions for each care coordination activity to most closely approximate the long-run marginal cost (Knapp et al. 1994; Netten et al. 1998). As such, to date it would appear to be the most comprehensive account of care coordination service time use, activity and cost outside the statutory sector in the UK.

Currently in England, policy guidance emphasises cost-savings and value for money as part of the rationale for outsourcing care coordination activities from local authorities (Department of Health and Social Care, 2018). In a review of studies of outsourcing it was noted that insufficient attention had been paid to the transaction costs of outsourcing affecting the accuracy of possible savings and their realisation. Transaction costs can include and vary according to: contract length; service complexity and degree of specificity; procurement processes; managing, reviewing and monitoring the contract (Sasse et al. 2019). Some of these issues were identified by agencies in the wider study (Abendstern et al. 2016b, 2019) with demands for contract monitoring consuming management time and short-term contracts affecting staff security and retention and thereby service stability. Nonetheless, a primary finding is that there were substantial cost variations between services and within particular settings. Indeed, these marked variations observed between service settings may constitute a more significant determinant of cost and time use than whether the service is provided by the statutory or non-statutory sector.

Substitutes and complements

In this study the services provided by the non-statutory sector were categorised as substitutes or complements to existing statutory provision. These are similar to the supplemental and complementary relationship models between statutory and non-statutory organisations described by Young (2000). In the present study complementary services were predominantly designed for people with dementia, providing advice and support to people after NHS led memory clinics had undertaken diagnostic work where statutory support is not always present (Ahmed et al. 2018). Substitute services were present in hospital discharge services and three of the four SWPwA pilots in the study.

As might be expected, the costs of the services designed to be substitutes were considerably higher than those which were complementary. It was noteworthy that three of the four SWPwA pilots included were designed to substitute for statutory services, and the one that was a complementary service had the lowest costs. However, the extent to which these services could act as substitute provision was debatable. An evaluation found that: the pilot services lacked some control over resources; were reliant on uncosted central local authority services such as human resources, payroll and information technology; had little scope for economies of scale; and that some expected savings did not materialise (Manthorpe et al. 2014). In addition, commissioners raised concerns about the sustainability of these services once the real running costs were established and the uncosted local authority support entered the balance sheets (Manthorpe et al. 2014). These operational and transaction costs are crucial to include in potentially substitute services (Sasse et al. 2019) and it is possible that some of these costs are also underestimated in the services in the present study.

There is a wider concern regarding the capacity of the non-statutory sector to substitute for statutory services and to reduce costs. The National Audit Office (2007) noted how fragmented funding, and variability in payment and monitoring arrangements rendered it difficult for non-statutory organisations in England to successfully provide public services. This differs markedly from countries like Australia where social care has many such providers (CPA, 2016). Services in this study were sometimes undertaking a limited range of care coordination responsibilities: on occasions accepting only some of the eligible service users; offering mainly short-term support; and relying on part-time staff and a volunteer workforce. This suggests that in their current form they are unlikely to be sustainable to replace statutory provision more comprehensively. This is particularly so given the short-term nature of funding and, as a consequence, relatively precarious staff contracts (Abendstern et al. 2016b; 2018). Longer term contracts are a precondition for such services to be stable and sustainable (Hardy & Wistow, 1998) permitting workforce development to shape quality care (Lewis & West, 2014). More generally, research into outsourcing needs to examine both cost and quality (Sasse et al. 2019) with one systematic review finding only half of the studies addressed quality (Petersen et al. 2018).

Limitations and further research

A strength of this study was that it used data from 17 different services operating in different environments selected from a national survey. However, some limitations do exist. Since this study employed a case study approach involving multiple sites some caution must be exercised with regard to the generalisability of the findings (Bowling, 2014). There are two other caveats. First, data for analysis of time use and costs were extracted from interviews with practitioners. Thus, it might possibly have been influenced by participant recall bias and by the interview focus on service delivery, thereby not capturing some indirect costs. Second, costs were attributed using the best nationally applicable data. Inevitably, assumptions were necessary where an activity was not undertaken by the service in the study but integral to the care coordination process, or not specified by the respondents.

However, this is one of the first UK studies to examine costs in a comprehensive way for care coordination in the non-statutory sector. It also, unusually, addressed outsourcing where services were part externalised and part not (Harland et al. 2005). Future research is required to undertake detailed comparisons of costs and outcomes between this sector and the statutory sector for similar groups of service users to explore to what extent cost efficiencies are achievable and the relative cost effectiveness of outsourcing.

Conclusion

This study is one of very few in the UK to explore the care coordination activities undertaken by practitioners in the non-statutory sector, their time use and associated costs. It has identified considerable diversity in the range of care coordination activities, time use and costs both within and between organisation types. These were greatly influenced by service setting. The extent to which these services were more efficient and flexible than those provided by the statutory sector is an area for future research. Such work will need to pay heed to the practice diversity in settings and roles identified in this study and to the sustainability of these models of care.

Competing Interests

The authors have no competing interests to declare.

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