



An Integrated Model of Co-ordinated Community-Based Care

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Received January 2 2014; Accepted June 4 2014.

Decision Editor: Suzanne Meeks, PhD

Purpose of the Study: Co-ordinated approaches to community-based care are a central component of current and proposed efforts to help vulnerable older adults obtain needed services and supports and reduce unnecessary use of health care resources.

Design and Methods: This study examines ElderHelp Concierge Club, an integrated community-based care model that includes comprehensive personal and environmental assessment, multilevel care co-ordination, a mix of professional and volunteer service providers, and a capitated, income-adjusted fee model. Evaluation includes a retrospective study ($n = 96$) of service use and perceived program impact, and a prospective study ($n = 21$) of changes in participant physical and social well-being and health services utilization.

Results: Over the period of this study, participants showed greater mobility, greater ability to meet household needs, greater access to health care, reduced social isolation, reduced home hazards, fewer falls, and greater perceived ability to obtain assistance needed to age in place.

Implications: This study provides preliminary evidence that an integrated multilevel care co-ordination approach may be an effective and efficient model for serving vulnerable community-based elders, especially low and moderate-income elders who otherwise could not afford the cost of care. The findings suggest the need for multisite controlled studies to more rigorously evaluate program impacts and the optimal mix of various program components.

Key words: Care co-ordination, Volunteer service provision, Mixed economy of care, Aging in place

Care co-ordination is a central feature of efforts to help vulnerable older adults overcome barriers to needed services and supports while containing public and private expenditures. Care co-ordination typically includes: (a) a comprehensive, individualized, face-to-face assessment of physical, psychological, and social functioning; (b) identification of service needs; (c) access to, and co-ordination

of, needed services and supports; and, (d) ongoing monitoring (Challis et al., 2002; Freij et al., 2011). The Patient Protection and Affordable Care Act, for example, includes a number of provisions explicitly designed to promote co-ordinated care, including the Independence at Home Demonstration Program, Community First Choice Option, Money Follows the Person Rebalancing

Demonstration, and Community-Based Care Transitions Program.

While a complete review of care co-ordination is beyond the scope of this article, existing research suggests a number of potentially salutary outcomes for individuals, families, and service delivery systems, including reduced mortality, improved social and emotional well-being, improved quality of life, delayed nursing home admissions, and decreased caregiver burden (e.g., Bernabei et al., 1998; Boulton et al., 2009; Challis et al., 2002; Counsell et al., 2007; Onder, Liperoti, Bernabei, & Landi, 2008). In addition, recipients of care co-ordination and case management have been found to receive better quality care, be more satisfied with the services they receive, and be more apt to adopt preventive strategies than are persons who receive traditional care without care co-ordination (Boulton et al., 2009; Onder et al., 2008). Care co-ordination also may help to reduce health care costs (e.g., Beland et al., 2006; Bernabei et al., 1998; Boulton et al., 2009), through reduced emergency department use, decreased numbers of inpatient admissions, and shorter stays (e.g., Bernabei et al., 1998; Shier, Ginsburg, Howell, Volland, & Golden, 2013).

However, not all studies of care co-ordination have produced such favorable results. Some randomized controlled trials comparing types of care co-ordination, for example, have found that intensive geriatric care management was no better than information and referral or usual care in producing reductions in medical costs or improvements in client well-being (Boulton et al., 2000; Enguídanos & Jamison, 2006), or may even result in increased use of health care services compared with controls (e.g., Boulton et al., 2009; Tourigny, Durand, Bonin, Hébert, & Rochette, 2004). These concerns suggest the need for more efficient and effective care co-ordination models.

Analyses of major existing models of care co-ordination suggest the particular importance of three program characteristics: comprehensive initial screening and assessment; matching the intensity of care co-ordination with the level of client need; and, involving clients and caregivers in all aspects of the process (Applebaum, 2012; Challis et al., 2011; Enguídanos & Jamison, 2006; Hyduk, 2002; Kelsey & Laditka, 2009). Findings from the Medicare Co-ordinated Care Demonstration project, furthermore, suggest that programs that help participants access a combination of formal and informal social supports (e.g., professionals, para-professionals, volunteers, and family members) contribute to better care, better health outcomes, and improved cost-effectiveness (Brown, 2009).

Comprehensive Assessment

Comprehensive geriatric assessments have consistently been found to reduce unnecessary health services utilization and

improve health outcomes (McCusker & Verdon, 2006). Yet, geriatric assessments seldom include the physical environment, even though environmental assessments and associated home safety interventions have been shown to reduce falls, a major source of disability and expense for vulnerable older adults (Gillespie et al., 2009). A pooled analysis of six randomized trials, for example, found a 21% reduction in falls among community-dwelling older adults in general and a 39% reduction among high-risk groups (Clemson, Mackenzie, Ballinger, Close, & Cummings, 2008).

Differential Service Intensity

Systematic matching of appropriate levels of care co-ordination with client needs and system capabilities is considered an important factor in the effectiveness of case management and care co-ordination (Boulton et al., 2000; Counsell et al., 2007; Hyduk, 2002; McCusker & Verdon, 2006; The SCAN Foundation, 2012). Targeting of care co-ordination services has been a key feature of government efforts to modernize social services in the United Kingdom for more than 15 years, as reflected in a differentiated care co-ordination model that typically includes three tiers: information and advice; care co-ordination; and, intensive care management for clients with complex and changing needs (Social Services Inspectorate, 1997).

For elders with less intense needs, telephone-based care co-ordination may be more efficient and nearly as effective as traditional in-person case management, especially when accompanied by periodic in-person assessments and reassessments. Telephone-based case management, for example, has been found to be as effective as traditional case management with regard to service satisfaction and quality of life (e.g., Enguídanos & Jamison, 2006), while also connecting vulnerable elders to needed support services (Findlay, 2003), decreasing hospitalization, and reducing health care costs (Shannon, Wilber, & Allen, 2006).

Consumer Involvement

Increasing consumer control regarding service provision is a key component of home and community-based care models and has been associated with improvements in cost-effectiveness, service flexibility, and user satisfaction (Kodner, 2003). Consistent with the promotion of consumer control is an increasing focus on greater consumer responsibility, including involvement in service provision and payment. Increased reliance on user fees is seen as a way to extend services to elders who do not qualify for Medicaid while limiting government risk, in a context of reduced availability of government funding and increasing recognition of the unmet needs of older adults who do not qualify for public

benefits (Grootegoed & Van Dijk, 2012; St John & Chen, 2010). The Older Americans Act, for example, explicitly authorizes area agencies on aging to involve consumers as partners in paying for services they receive, where appropriate (Older Americans Act, 2000).

Provider Mix

Using volunteers to provide non-professional community support services can increase efficiency and reduce operational costs by producing greater output using fewer organizational resources, typically yielding value far exceeding program costs (Hager & Brudney, 2005; Handy & Srinivasan, 2004; Wacker & Roberto, 2013). In addition to reducing workload demands on paid staff, volunteers can contribute to enhancements in service quality, service recipient satisfaction, community relations, public financial and political support for the organization, and social capital (Hager & Brudney, 2005; Rubin, Neal, Fenlon, Hassan, & Inouye, 2011).

The 2006 reauthorization of the Older Americans Act, for example, specifically called upon local area agencies on aging to “make use of trained volunteers in providing direct services delivered to older individuals and individuals with disabilities needing such services” (U.S. Administration on Aging, 2006, Sec. 306 (A)(6)(C)(iii)). Another promising approach for enhancing service efficiency involves partnering with select community service providers who are known to provide quality services geared to the particular needs of elderly consumers, often at a discount (Scharlach, Graham, & Lehning, 2012).

The study described here examines an innovative program model that integrates these various program components and provides preliminary evidence of the model’s potential benefits for low-income elderly program participants.

Program Description

ElderHelp of San Diego (EH) was established in 1973 as an independent non-profit agency in the North Park neighborhood of San Diego, California, an area with a high density of frail, isolated seniors. Between 1973 and 1990, EH provided friendly visiting and volunteer housekeeping assistance to frail seniors in that area, adding a care management program in addition to additional volunteer services in the 1990s. In 2009, EH established the “Concierge Club,” expanding the range of volunteer services and changing the service delivery model from an entitlement program (free to service recipients) to a service organization (requiring paid memberships from participants), in an effort to utilize membership dues to augment revenue from grants and government funding.

Concierge Club Members

Membership in Concierge Club (CC) is eligible to persons age 60 years or older who live in the targeted geographic area and do not appear to have a condition that would prevent them from participating fully in their own care (e.g., severe cognitive impairment or mental illness). At the time of this study, CC had 208 members, of whom 53% were age 80 or older; 79% were female and 21% were male; 82% were white, 4% were African American, 2% were Indian or Alaska Native, 3% were Asian or Pacific Islander, and 9% were multiracial or other; 4% were Hispanic; 79% lived alone, and 21% lived with family members or others; 62% had annual incomes under \$13,000. Compared with persons age 60 or older in San Diego County, CC members were more likely to be female, over the age of 80, living alone, poor, on Medicaid, and less likely to be Asian or Pacific Islander or Hispanic, as shown in Table 1.

Service Levels

The typical entry point into the CC is by phone. When individuals contact CC for information or services, they receive a brief assessment designed to determine their eligibility for CC services (based on age and geographic location), as well as the type of services they appear to need: information and referral services only (Tier 1), transportation services only, or other CC services (Tiers 2 and 3).

Information and referral only (Tier 1): Seniors who call CC only seeking answers to specific aging-related questions or specific services not provided by CC are logged into the system but are not enrolled as CC members; they receive relevant information or referral to a community service provider, but do not receive a formal assessment, home visit, or any other care co-ordination services.

Volunteer driving services only: Seniors initially assessed as needing transportation only are enrolled into the CC volunteer driver program; they then are sent an application and release forms, which they fill out and return, along with income verification. Members who receive volunteer driving services receive periodic monitoring by program staff to assess whether their needs are being met or whether additional care co-ordination is required, but no other care management services unless their condition changes.

Home assessment (Tiers 2 and 3): Seniors who are initially assessed as having ongoing needs for assistance other than transportation receive an in-home assessment by the CC Intake Specialist. The Intake Specialist assesses the senior’s service needs, completes a home safety assessment that identifies potential home hazards and needed environmental modifications and assistive devices, assesses the need for ongoing care management, and develops a service plan.

Table 1. Respondent Demographic Characteristics, Compared With Concierge Club and San Diego County 60+

	Current member survey	Prepost test	All Concierge Club (June 2011)	San Diego County aged 60 and older ^a
Total sample	96	21	208	525,945**
Tier 2	40.6%	25%	60.6%	
Tier 3	26%	75%		
Transportation only	33.3%	0	39.4%	
Gender				
Female	82.3%	90.5%	79.3%	55.6%
Male	17.7%	9.5%	20.7%	44.4%
Household comp				
Live alone	84.4%	66.7%	78.8%	38.9%
Live with others	12.5%	33.3%	20.7%	61.1%
Not disclosed	3.1%	0	0.5%	0
Race/ethnicity				
White	85.4%	85.7%	81.7%	80.8%
African American	6.3%	14.3%	4.3%	3.5%
American Indian/Alaska native	1%	0	2.4%	0.5%
Asian/Pacific Islander	1%	0	2.9%	10.5%
Hispanic of any race ^b	2.2%	0	4.3%	15.4%
Other ^c	6.1	0	8.7%	4.7%
Age range				
59 years or younger	1.1%	0	1%	Not calculated
60–69 years	24.7%	25%	23.1%	50.4%
70–79 years	26.9%	40%	22.6%	28.3%
80–89 years	35.5%	15%	38.5%	17.7%
90–99 years	11.8%	20%	13.9%	3.5%
100 years or older	0	0	1%	0.1%
Income ^d				
<\$13,000	79.2%	52.4%	62.5%	12.6% ^e
\$13,000–\$15,999	10.4%	4.8%	12.5%	Not available
\$16,000–\$24,999	6.3%	19%	11.5%	11.0% ^f
\$25,000–\$49,999	3.1%	9.5%	3.4%	25.5% ^g
\$50,000 and above	1%	14.3%	1.9%	49.8%
Not disclosed	0	0	8.2%	Not available
Health insurance ^h				
Medicare		95.2%	98%	94.9%
Medicaid		47.6%	28%	11.6%
Private		47.6%	Not available	85.5%

Notes: ^ahttp://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_SF1_QTP2&prodType=table.

^bPercentages for “Hispanic of any race” overlap with the other categories resulting in the total percentages in the Race/ethnicity column not adding up to 100%.

^cOther includes multiracial and not disclosed.

^dIncome data for 65+ in San Diego County, from 2009 California Health Interview Survey, <http://ask.chis.ucla.edu>.

^eAge 65+, annual income \$15,000 or less.

^fPercentage estimated using interpolation.

^gPercentage estimated using interpolation.

^hHealth insurance data for 65+ in San Diego County, from 2009 California Health Interview Survey, <http://ask.chis.ucla.edu>.

Volunteer support services only (Tier 2): Seniors whose situations are assessed as being relatively stable and safe, who have adequate formal and informal supports, and whose needs can be met through volunteer services, are assigned to Tier 2. Tier 2 members receive a phone call from the Volunteer Liaison every month for the first 3 months and then quarterly thereafter to assess whether the volunteer relationship is satisfactory,

a follow-up assessment by the care co-ordinator to determine whether more intensive care management is required, and also an annual home visit to assess changes in their service needs.

Services are provided by approximately 200 volunteers, ranging in age from 18 to 94, with an average age of 47; 73% percent are female, and 27% are male. These EH CC volunteers provide seven types of support services:

- Driving (“Seniors a-Go-Go”): Volunteer drivers, matched to participant transportation needs via a computer-assisted tracking system, provide rides within a 10-mile radius, most often to medical appointments.
- Grocery shopping: Volunteers take members grocery shopping or do the shopping for members who are immobile.
- Housekeeping (“Tidy Keeper”): Volunteers come to members’ homes to help with light housework.
- Home maintenance and repair: Volunteers help members maintain their yards, do repair work around the house, or make minor home safety modifications.
- Financial advocacy (“Bill Minder”): Volunteers help members organize their bills and mail.
- Friendly visiting: Volunteers visit members several times per month for companionship.
- Pet care (“Pet Pals”): Volunteers walk or feed members’ pets.

Care management (Tier 3): Seniors whose initial home visit reveals chronic complex needs or unstable situations receive ongoing care management. Based on the initial assessment, a care manager develops a preliminary care plan that includes volunteer services as well as other community services as needed, followed by telephone contacts at least monthly and in-person visits at least quarterly to monitor the situation and assist members to access the services they need. In addition to care co-ordination and social and emotional support, care managers provide assistance with one or more of the following: applications to public programs, connecting members to free or approved discounted services in the community, transportation to and advocacy during doctor appointments, locating affordable accessible housing, assisting with budgeting, and acting as a mediator between members and their families.

Preferred Provider Network: CC membership includes access to a Preferred Provider Network of vetted community service providers, who provide services at a discount to CC members.

Financial assistance: Members who are in financial distress or at risk of not meeting their health or nutritional needs due to a lack of funds can receive assistance through a Client Support Fund, which is used to purchase taxi vouchers, grocery cards, safety equipment, incontinence supplies, and other tangible items.

Fee Structure

CC has a capitated fee model, with membership fees based on three factors: income level, home ownership, and the number of services provided. Income thresholds are set

using the Elder Economic Security Index for San Diego County, which takes into account cost of living and home ownership. Table 2 displays the different membership fees by income, home ownership, and number of services per month. At the time of this study, 125 members had incomes below \$2,000 per month and therefore received free services; the remainder paid monthly membership fees of \$100 or less. In addition to income-based membership fees, members may be asked for a donation to cover the additional cost of services they receive.

Methods

Retrospective Study

Study Procedures

Individuals who were CC members on June 1, 2010 and met study eligibility criteria were invited to participate in a structured telephone interview regarding their experiences with CC. Of 208 current CC members, 78 did not meet eligibility criteria and were excluded from participation: 23 were screened out initially by staff because of cognitive impairment that prevented full comprehension of study procedures, limited English proficiency, or other complicating factors; another 55 were found to be ineligible during the interview process because they could not communicate effectively over the phone, had not used a CC service within the past 12 months, were hospitalized or institutionalized, or had passed away. Of 130 eligible CC members, 96 participated in telephone interviews, for a 73.8% response rate; 21 refused to participate and 13 could not be reached despite multiple attempts over several weeks.

Measures

Perceived service impact was assessed by asking the 96 existing CC members whether they had used each of the seven service types in the previous 6 months, and if so whether accomplishing relevant tasks (e.g., getting to places outside of walking distance, repairing or maintaining their home, keeping their home clean) had stayed the

Table 2. Concierge Club Fee Structure

Level	Homeowner income per year	Renter income per year	Fees per month	
			4 services	8 services
1	<\$13,000	<\$20,000	\$0	\$0
2	\$13,000–\$15,999	\$20,000–\$22,999	\$25	\$40
3	\$16,000–\$24,999	\$23,000–\$31,999	\$50	\$80
4	\$25,000–\$49,999	\$32,000–\$49,999	\$100	\$160
5	\$50,000–\$74,999	\$50,000–\$74,999	\$200	\$320
6	\$75,000 and over	\$75,000 and over	\$250	\$400

same, become easier, or become more difficult since joining the CC.

Data Analysis

Simple frequency counts were used to calculate the number of respondents reporting that a service-related task had become easier.

Prospective Study

Study Procedures

Each of the 26 individuals who joined the CC between July 2010 and December 2011 was informed about the study and given the opportunity to complete an informed consent form at the time of their intake assessment by the CC Intake Specialist. Six-month follow-up interviews were conducted with 21 of these 26 CC members (two dis-enrolled from the CC, two declined to participate in the follow-up interview, and one died within 6 months after enrolling), an 81% retention rate.

Measures

Physical well-being measures included a single-item measure of self-rated health (1 = poor, 5 = excellent) (RAND, 2009), a set of six questions assessing functional impairment with personal care activities of daily living (e.g., dressing, bathing, toileting, transferring; 1 = no difficulty, 4 = unable to do without human assistance) (Visiting Nurse Service of New York, 2004), and a question regarding the number of times they had fallen to the ground in the past 6 months (Fall Prevention Center of Excellence, n.d.). Psychosocial well-being measures included a single-item measure of self-rated mental health (1 = poor, 5 = excellent) (Waite et al., 2007), a 12-item affect balance scale with six positive and six negative items (1 = none of the time, 6 = all of the time) (Waite et al., 2007), a 3-item social isolation scale (1 = never, 3 = often) (Hughes, Waite, Hawkey, & Cacioppo, 2004), and a single-item life satisfaction measure (1 = very dissatisfied, 4 = very satisfied) (Centers for Disease Control, 2010). Social interaction was assessed by asking respondents how often in the past 6 months they saw or spoke with friends or relatives (1 = never, 5 = daily), how often they attended meetings of an organized group (1 = never, 5 = several times a week), and whether they could use more social visits (1 = yes, 2 = no) (Waite et al., 2007).

Mobility was assessed by asking how often respondents left home for any reason (1 = never, 5 = several times a week), how often they got where they needed or wanted to go (1 = never, 5 = always), and whether they could use more help getting to places out of walking distance (1 = yes, 2 = no) (Visiting Nurse Service of New York, 2004; Waite et al., 2007). Unmet need for assistance with transportation,

house care, and money management was assessed by asking whether respondents could use more help in each of those areas (1 = yes, 2 = no) (U.S. Administration on Aging, 2013). Home safety was assessed by asking respondents whether they used home safety devices (e.g., bathroom grab bars; 1 = no, 2 = yes) and whether additional safety modifications were needed (1 = yes, 2 = no) (adapted from Visiting Nurse Service of New York, 2004), and by asking CC staff to indicate whether the residence required significant repairs or modifications (1 = yes, 2 = no). Health service use was measured by the number of emergency room visits and hospital stays in the previous 6 months (California Health Interview Survey (CHIS), 2011), and by asking respondents to indicate whether they had delayed or not gotten needed medical care in the previous 6 months (1 = no, 2 = yes) (Visiting Nurse Service of New York, 2004). Perceived ability to age in place was assessed by asking respondents to rate the likelihood (1 = not confident at all, 4 = very confident) that they would be able to afford to live in their current residence as long as desired and would be able to obtain necessary help to do so (Visiting Nurse Service of New York, 2004).

Data Analysis

Differences between scores on the intake assessment and 6-month follow-up assessment were examined using the Wilcoxon signed-rank test, after first calculating affect and social isolation scale scores and dichotomizing variables at conceptually and empirically meaningful cut-points (e.g., poor/fair health vs. good/very good/excellent health).

Results

Retrospective Study

Study Sample

Of the 96 participants in the retrospective study, 82% were female and 18% male; 85% were white, 6% were African American, 1% were Asian or Pacific Islander, 1% were Indian or Alaska Native, and 6% were multiracial or undisclosed; 2% were Hispanic; 84% lived alone (see Table 1). Participants were somewhat more likely than non-participants to live alone or have incomes under \$13,000/year, but otherwise were highly representative of CC members.

Service Use

Of the 96 current members who participated in the retrospective study, 32 were assigned to transportation services only, 39 were assigned to Tier 2 (volunteer services only), and 25 were assigned to Tier 3 (care management and volunteer services). Overall, 60 (62.5%) used the volunteer driving service, 35 (36.5%) received help with grocery shopping, 20 (20.8%) received friendly visiting, 8 (8.3%)

used home repair services, 7 (7.3%) used the financial advocacy service, 4 (4.2%) received assistance with housekeeping, and 1 participant (1%) used the pet care service.

Perceived Service Impact

As shown in Table 3, existing CC members consistently reported that accomplishing relevant tasks had become easier since joining the CC, with the greatest improvements in the areas of home safety, housekeeping, shopping, and money management.

Prospective Study

Study Sample

The 21 participants in the prospective study ranged in age from 60 to 95, with a median age of 76; 91% were female; 67% lived alone; 52% had annual incomes of less than \$13,000/year. Compared with the overall CC membership, prospective study participants were more likely to be age 70–79, female, African American, living with others, and with incomes of at least \$16,000/year.

Service Use

Of the 21 new members who participated in the prospective study, 5 were assigned to Tier 2 (volunteer services only), and 16 were assigned to Tier 3 (care management and volunteer services). Of these, 15 (71.4%) used the volunteer driving service, 18 (85.7%) received help with grocery shopping, 8 (38.1%) received assistance with housekeeping, 9 (42.9%) used home and garden services, 4 (19.1%) used the financial advocacy service, 13 (61.9%) received friendly visiting, and 1 (4.8%) used the pet care service.

Physical, Psychological, and Social Well-Being

As shown in Table 4, participants in the prospective study experienced significant reductions in the number of

falls in the previous 6 months ($z = -2.65, p < .01$), even though neither self-rated health nor functional limitations changed significantly. Self-rated mental health, positive affect, life satisfaction, negative affect, and social isolation did not change significantly; nor did contact with friends and relatives or participation in meetings of organized groups.

Unmet Needs

Participants were significantly more likely to report leaving their homes ($z = -2.51, p = .01$) or getting to the places they wanted or needed to go ($z = -3.22, p < .001$), and they experienced a significant reduction in unmet transportation needs ($z = -3.74, p < .001$). There was a statistically significant reduction in unmet needs for housekeeping ($z = -2.00, p < .05$), but few participants had money management problems at intake or at follow-up.

Health Services Utilization

Participants were more likely to report obtaining needed medical care ($z = -2.00, p < .05$), while emergency room and hospital visits did not change significantly.

Ability to Age in Place

The number of respondents who reported being very confident that they could get the help they needed to age in place increased significantly from intake to follow-up ($z = -3.07, p < .01$), whereas the number who were very confident that they could afford to continue living in their own homes did not increase significantly. The number of home hazards decreased significantly ($z = -1.93, p = .05$), whereas unmet needs for assistive devices or home modifications did not change significantly during the study period.

Discussion

The co-ordinated approach to community-based care examined here included a number of recommended features of care co-ordination programs, including: comprehensive personal and environmental assessments, care co-ordination matched to the level of client needs, environmental modifications, volunteer support services, referral to additional vetted service providers, financial assistance, and a heavily subsidized capitated fee model, with monthly dues based on income and service level. Findings suggest that the CC approach may have contributed to increased client mobility, improved ability to meet household needs, greater access to health care, reduced falls, and greater perceived ability to age in place. Furthermore, the value of services exceeded the costs of the program, and clients received benefits valued at nearly three times the average cost of membership (Scharlach, Graham, & Berridge, 2012).

Table 3. Self-Reported Service Use and Impacts, Existing CC Members ($n = 96$)

Service	Current members	
	Users	Improvement reported
Mobility (driving)	60	38 (63%)
Shopping	35	34 (97%)
Social interaction (companionship)	20	12 (60%)
Home safety (home repair)	8	8 (100%)
Financial (money management)	8	7 (88%)
Housekeeping (tidy keeper)	4	4 (100%)
Pet care	1	1 (100%)

Note: CC = Concierge Club.

Table 4. Service Needs and Well-Being at Intake and 6-Month Follow-Up, New Members ($n = 21$)

	Intake	Follow-up	Test for significance of differences
Physical well-being			
Self-rated health (good, very good, or excellent)	8 (38%)	10 (48%)	$z = 0.49$ ($p = .63$)
Functional limitations (ADLS; mean)	2.33 ($SD = 0.91$)	2.57 ($SD = 0.87$)	$Z = 1.41$ ($p = .16$)
Falls (6 months, mean)	1.3 ($SD = 1.39$)	0.2 ($SD = 0.14$)	$z = -2.65$ ($p < .01$)
Psychosocial well-being			
Self-rated mental health (good, very good, or excellent)	13 (62%)	18 (86%)	$z = 0.68$ ($p = .50$)
Positive affect (mean)	15.5	18.1	$z = 1.74$ ($p = .08$)
Negative affect (mean)	18.0	16.5	$z = -0.79$ ($p = .43$)
Social isolation (mean)	8.7 ($SD = 3.24$)	7.0 ($SD = 2.75$)	$Z = -2.81$ ($p < .01$)
Life satisfaction (satisfied)	11 (52%)	15 (71%)	$z = 1.47$ ($p = .14$)
Social interaction			
See or speak to friends or relatives (at least weekly)	16 (76%)	21 (100%)	$z = 0.30$ ($p = .76$)
Attend meetings (at least monthly)	7 (33%)	10 (48%)	$z = 0.36$ ($p = .34$)
Mobility			
Leave home (at least weekly)	15 (71%)	21 (100%)	$z = 2.51$ ($p = .01$)
Get where desired (usually)	8 (38%)	19 (91%)	$z = 3.22$ ($p < .001$)
No transportation needs	5 (24%)	20 (95%)	$z = 3.74$ ($p < .001$)
House care			
No housework needs	13 (62%)	17 (81%)	$z = 2.00$ ($p < .05$)
Money management			
No money management problems	19 (91%)	21 (100%)	$z = 1.41$ ($p = .16$)
Health services utilization			
Hospital or ER visits (6 months)	8 (38%)	5 (24%)	$Z = -0.45$ ($p = .65$)
Delayed care	4 (19%)	0	$z = -2.00$ ($p < .05$)
Home safety			
Home safety hazards (mean)	1.43 ($SD = 1.86$)	0.76 ($SD = 1.34$)	$Z = -1.93$ ($p = .05$)
Assistive device needs met	12 (57%)	17 (81%)	$z = 1.90$ ($p = .06$)
No need for home modification	16 (76%)	16 (76%)	$Z = -.58$ ($p = .56$)
Aging in place			
Affordability (very confident)	12 (57%)	16 (76%)	$z = 1.89$ ($p = .06$)
Assistance (very confident)	5 (24%)	15 (71%)	$z = 3.07$ ($p < .01$)

Note: ADL = activities of daily living.

There are a number of mechanisms by which CC's coordinated approach may have contributed to these salutary outcomes. The volunteer transportation service most often was used to help participants get to medical appointments, potentially enhancing their ability to meet health care needs; however, transportation also was used to get to social activities and to see friends, which may have helped to reduce participant isolation. Comprehensive personal and environmental assessments completed at the time of admission, coupled with minor home modifications and access to mobility assistance devices (e.g., walkers, wheelchairs, canes), may have contributed to improved home safety and possibly reduced the risk of falls. Contacts with friendly visitors, coupled with supportive personal relationships with volunteer drivers matched to member needs and preferences, may have contributed to enhanced social interaction and in some cases may have contributed to reduced social isolation. Finally, having a member liaison to call on when assistance was needed, coupled with care

co-ordination whose intensity was matched to the level of client needs, may have provided a sense of security associated with the ability to get the help when needed, possibly contributing to a greater perceived ability to age in place.

Particularly noteworthy is a diversified resource model that included heavy reliance on volunteers, discounted services from vetted formal service providers, and capitated user fees. User pay schemes have a number of potential benefits, including increased consumer control, more diversified financing sources, and increased service access for persons not eligible for Medicaid or other public programs (Grootegoed & Van Dijk, 2012). However, user fees also raise a number of important concerns, particularly in terms of devolution of responsibility and shifting of risk to vulnerable elderly consumers and their families (Scharlach & Lehning, 2012). The capitated income-adjusted approach adopted by the CC program may be one way to involve users in helping to offset service costs while mitigating consumer risk.

Finally, CC utilizes an integrated multilevel service approach, which is designed to target human resources so that clients receive the most appropriate levels of assessment, service provision, and care co-ordination. The assessed level of client need determines whether clients receive telephonic assessments or comprehensive in-home personal and environmental assessments, services from volunteers or paid professionals, and periodic oversight and service co-ordination or ongoing case management. This “differentiated” model of care management, whereby the comprehensiveness of the assessment and the intensity of professional care management services are calibrated to client needs, has been suggested as an important mechanism for more efficiently utilizing human resources while fostering appropriate levels of client involvement in care decisions (Challis et al., 2011), and serves as the basis for most consumer-directed care models (Doty, Mahoney, & Sciegaj, 2010).

It should be noted, however, that care co-ordination may not always result in cost savings, and some well-controlled studies have shown cost increases (Applebaum, 2012). A more achievable goal may be appropriate service use, which may include improved access to needed services or reduced use of services that are ineffective or unnecessarily costly (Boult et al., 2009). Given the comparatively high levels of unmet needs among community-dwelling older adults and persons with disabilities in the United States (Shea et al., 2003), substantial increased access to formal and informal support services may be beneficial in itself, even in the absence of short-term reductions in overall care costs. Finally, effective care co-ordination should be available regardless of individual characteristics or place of residence; yet, substantial disparities in access to care co-ordination remain, especially among immigrant, minority, and suburban populations. Integrated financing and a trusted advisor, as in the model examined here, may help to improve access to care management for underserved elders (Judd & Moore, 2011).

Study Limitations

This study has a number of limitations which may affect generalizability of the findings. Retrospective impact scores are highly vulnerable to self-report bias, and prepost scores from a limited sample are not a substitute for a controlled experiment, weakening our ability to attribute observed effects solely to the CC program. Moreover, measures were adapted for use in this study, often relying on a limited number of items or response categories. Because program volunteer selection and member recruitment were non-random, volunteers and the older adults they serve cannot

be assumed to be representative. Finally, because of the uniqueness of the study site, the program analyzed here cannot be said to be representative of other community-based aging services programs.

Implications for Future Research

CC’s integrated multilevel care co-ordination approach may represent a promising model for serving vulnerable community-based elders, especially low and moderate-income elders who otherwise could not afford the cost of care. Additional research is needed regarding the relative contributions, and optimal mix, of various program components, including comprehensive personal and environmental assessments, multilevel care co-ordination, mix of professional and volunteer providers, and preferred provider network. Given the importance of care co-ordination to current and proposed efforts to improve care transitions and reduce unnecessary use of health care resources, multisite controlled studies of care co-ordination for persons with chronic disabilities are a necessity. Even after half a century of case management program development and evaluation efforts, it remains the case that “case management for patients with long-term conditions is at an early stage of development” (Challis et al., 2011, p. 8).

Funding

This work was supported by a grant from The SCAN Foundation.

Acknowledgments

The authors wish to thank the staff of ElderHelp of San Diego and the members of ElderHelp Concierge Club for their assistance with this evaluation.

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