Evidence Table 6. Observational Studies of Case Management for Dementia

| **Author Year**  **(Quality)** | **Population** | **Categorization of Exposure** | **How Subjects Were Referred to Case Management** | **Demographics (age, gender, race)** | **Study Design/ Type** | **Adjusted Variables, Selection of Controls (for case-control studies)** |
| --- | --- | --- | --- | --- | --- | --- |
| Challis 2002117  (Fair) | Diagnosis of dementia, significant needs unmet by the existing services, and perceived risk of institutionalization | Case managers maintained structured care plans which were completed at regular intervals using a tool specifically designed for the study. | Staff from the community mental health team for the elderly made referrals | Mean age: 81 years; 30% male Race/ethnicity: NR | Quasi-experimental design | Aspects of needs, quality of care, and quality of life, encompassing the perspectives of the older person, carers, and the assessing researcher. |
| Specht 2009151  (Poor) | Counties were selected based on rural demographics. Selected in pairs of those served by same Area Agency on Aging and Alzheimer's Association Chapter.   Participants included if had memory impairment, even "suspected" and based on county of residence. Not excluded based on age or economic criteria but traditional case management system serves only those over 60 years of age and most services from other funding sources reserved for those who qualify under stringent income guidelines. | Registered nurses who received training in dementia management and assessment acted as nurse case managers in intervention group; They completed assessment with caregiver and care recipient to identify issues and instituted interventions that met needs; performed home visits as needed with at least monthly contact, and always available by phone. Periodic re-assessment to modify care plan as required. Other interventions were reminiscence, role supplementation, environmental restructuring for health and safety, and resource mobilization. Information about the disease provided, as well as assistance to care recipient with activities of daily living, respite for caregiver and encouragement of use of services and support groups. | Enrollment through a local project facilitator; collected comparator data and made referrals. Referrals also made by participant, or family, or by physicians, public health or social service workers calling local area agencies or case management offices. | Care recipients: Intervention group, n=107 vs. Comparator group, n=40: Mean age (SD): 82.4 (8.2) years, range: 43.0-95.4 years vs. 78.5 (8.6) years, range: 53.6-91.5 years; p=0.012 Gender: 68.2% female (n=73) vs. 57.5% female (n=23); p=0.247  Race: NR Total annual income (US dollars):  <8,000: 27.2% (n=25) vs. 15.4% (n=6)  8,000-11,999 : 22.8% (n=21) vs. 23.1% (n=9)  12,000-14,999: 17.4% (n=16) vs. 15.4% (n=6) 15,000-19,999: 17.4% (n=16) vs. 10.3% (n=4) 20,000-29,999: 8.7% (n=8) vs. 20.5% (n=8) >,=30,000: 6.5% (n=6) vs.15.4% (n=6) p=0.043 Live with caregiver: 70.1% (n=75) vs. 85.0% (n=34); p=0.089 Groups significantly different on age, diagnosis of Alzheimer's, annual income, health changed in last 12 months, ADL index (p<0.05) Caregivers: Intervention group, n=75 vs. Comparator group, n=34: Mean age (SD): 63.9 (14.7) y, range: 31.1-92.3 vs. 69.2 (11.5) y, range: 46.6-85.7; p=0.071 Gender: 75.7% female (n=56/74) vs. 63.6% female (n=21/33); p=0.246 Race: NR Total annual income (US dollars): <8,000: 28.3% (n=15) vs. 19.2% (n=5)  8,000-11,999 : 11.3% (n=6) vs. 19.2% (n=5)  12,000-14,999: 9.4% (n=5) vs. 7.7% (n=2) 15,000-19,999: 15.1% (n=8) vs. 11.5% (n=3) 20,000-29,999: 15.1% (n=8) vs. 26.9% (n=7) 30,000-39,999: 11.3% (n=6) vs.3.9% (n=1) >,=40,000: 9.4% (n=5) vs. 11.5% (n=3) p=0.687  Groups significantly different on relation to care recipient, caregiver endurance (p<0.05) | Prospective matched cohort | p.197: Care recipient analyses: mixed model analysis adjusted for presence/absence of caregiver  Caregiver analyses: Not adjusted but co-variate analysis performed to test care recipient variables (GDS, MMSE, ADL index, behavior rating index, functional abilities rating, age, and caregiver characteristics (age, education, health) with caregiver stress, well-being, and endurance potential by extending logistic regression model to include 1 covariate at a time. |

| **Author Year**  **(Quality)** | **Incidence (if cohort study)** | **Patient Health Outcomes** | **Results by Patient Health Outcomes** | **Results by Resource Utilization Outcomes** | **Results by Process Measure Outcomes** | **Effects of Confounders, Intensity of Case Management, Duration** |
| --- | --- | --- | --- | --- | --- | --- |
| Challis 2002117  (Fair) | NR | QOL and quality of care for older people and their carers. | QOL measures : (statistically significant (p<0.05) results at 6 months) CM more satisfied with their home environment, improvements in social contact; reduction in distressing behavior Quality of care measures: (statistically significant results at 6 months and maintained at 12 months) reduction in needs overall as rated by carers p<0.001; reduction in ADL needs p<0.01; reduction in levels of risk p<0.05; Carer’s needs and QOL: (statistically significant [p<0.05] results for CM group at 12 months) reduction in total hours of input by carers; reduction of felt burden for carers. Destinational outcomes: Differences between the two groups in the rate of placement are not evident until after the first year. By 18 months 56% receiving CM and 51% receiving usual care remained in their own homes. At 2 years, 51% of CM group remained at home compared with 33% of the usual care group. | The differences in service receipt constitute the main differences in costs, with the majority of the increased cost for CM accounted for by total professional visits (24%) [CM 63 days/year, usual care 33.5 days/year, p<0.01)], total home care (44%) [CM 13.3 days/year, usual care 4.7 days/year], and acute hospital care (27%) [CM psych 12.4 days/year and medical 18.3 days/year vs. usual care psych 7.0 days/year and medical 13.7 days/year) | NR | Case management: Provided appropriate services; had access to all relevant health and social service resources.  Duration: 2 years |
| Specht 2009151  (Poor) | NA | Care recipient: 1) ADL index: 1-5, 1=more care 2) Behavior rating index: 1-13, 1=less negative behaviors 3) MMSE:1-30, 1=more impairment 4) GDS:1-7, 1=less impairment  Caregiver: 1) Stress 2) Well-being 3) Endurance potential | Care recipient: ***Comparing outcomes at followup for intervention vs. comparator groups:*** Followup data at 3-9 months for n=93 vs. n=32 Followup data at 9-15 months for n=64 vs. n=23 1) ADL index (1-5, 1=more care):  Baseline: 2.14+/0.07 vs. 2.48 +/-0.15 3-9 months followup: 2.31+/-0.07 vs. 2.50+/-0.15, p≤0.003 9-15 months followup: 2.45+/-0.07 vs. 2.55+/-0.14, p≤0.0001 2) Behavior rating index (1-13, 1=less negative behaviors) Baseline: 1.71+/-0.06 vs. 1.60+/-0.11 3-9 months followup:1.67+/-0.06 vs. 1.80+/-0.13 9-15 months followup: 1.58+/-0.06 vs. 1.72+/-0.13 3) MMSE (1-30, 1=more impairment) Baseline: 20.76+/-0.64 vs. 20.41+/-1.45 3-9 months followup: 21.66+/-0.66 vs. 20.70+/-1.80 9-15 months followup: 21.15+/-0.76 vs. 20.60+/-1.67 4) GDS (1-7, 1=less impairment) Baseline: 4.0+/-0.1 vs. 3.4+/-0.3 3-9 months followup: 4.2+/-0.1 vs. 3.6+/-0.3 9-15 months followup: 4.3+/-0.1 vs. 3.7+/-0.3  Significant group differences noted above. Other variables not significant between groups.  Caregiver: ***Comparing outcomes at followup for intervention vs. comparator group (p.200):*** Followup data at 3-6 months for n=40 vs. n=23 Followup data at 9-15 months for n=29 vs. n=16 During 15 months followup, intervention and comparator groups showed significantly different patterns of change over time for all 3 outcomes; (p=0.014 for stress, p=0.002 for WB, p=0.006 for EP) | NR | NR | Study cites limitations as follows: followup evaluations not done in timely manner, lack of followup decreased number of participants in analysis, care recipient groups and caregiver groups significantly different at baseline  Case management: Initial assessment, home visits as required (often weekly in the beginning), "periodic" reassessment. Always available by phone.  Duration: 3 years of grant |
| Specht 2009151  (Poor)  Continued |  |  | 1) Proportion with extensive stress did not significantly change in intervention group over time (p>0.38), although there was an increase amongst comparator group at 3-9 month followup (p=0.077) that decreased at 9-15 month followup. At 3-9 months, comparator group more likely to have extensive stress compared to intervention (OR=5.56; 95% CI 1.27-24.37; p=0.19) 2) Proportion with substantially compromised WB increased significantly in comparator group at 3-9 month followup (p=0.018), remained high at 9-15 month followup. Compromised WB decreased during followup in intervention group, not significant. At 9-15 months followup, comparator group more likely to have compromised WB than intervention group (OR=8.07; 95% CI 1.10-59.32; p=0.038) 3) Proportion with inadequate EP decreased significantly at 3-9 months in intervention group (p=0.013). Proportion with inadequate EP in comparator group increased at followup, not significant.  ***Covariates associated with caregiver outcomes:*** Caregiver extensive stress associated with higher care recipient behavior rating index, per unit increase (OR=3.52; 95% CI 1.81-6.83; p=0.005) Substantially compromised WB associated with higher behavior rating index, per unit increase (OR=2.28; 95% CI 1.20-4.35; p=0.035) and associated with caregiver health change, per unit increase (OR=2.10; 95% CI 1.23-3.59) Inadequate endurance associated with care recipient age, per 5 year decrease (OR=1.61; 95% CI 1.30-5.18; p=0.027)and associated with caregiver age, per 10-year decrease (OR=1.61, 95% CI 1.13-2.29; p=0.020) |  |  |  |

Abbreviations: ADL=Activities of Daily Living Index, CM=case management, EP=endurance potential; GDS=Geriatric Depression Scale, MMSE=Mini-Mental State Examination, SD=standard deviation, QOL=quality of life, WB=well-being.