Material prepared for Dual Eligibles Technical Workgroup

These abstracts were selected from articles found in the Evidence Based Database on Aging Care (**EDAC**). The database is accessed at http://www.searchedac.org/index.php
More detail is found on "reviewed articles" in the database, such as commentary on the sample characteristics and methods, which helps the reader determine whether the findings would apply to dual eligibles in Medi-Cal.

Author: Beland, F.; Bergman, H.; Lebel, P.; *et al*
Article Title: A system of integrated care for older persons with disabilities in Canada: results from a randomized controlled trial
Journal Name: *The journals of gerontology. Series A, Biological sciences and medical sciences*
Date, Volume, Issue, Page#: Apr 2006, Vol. 61, Iss. 4, p. 367
Abstract: "BACKGROUND: Care for elderly persons with disabilities is usually characterized by fragmentation, often leading to more intrusive and expensive forms of care such as hospitalization and institutionalization. There has been increasing interest in the ability of integrated models to improve health, satisfaction, and service utilization outcomes. METHODS: A program of integrated care for vulnerable community-dwelling elderly persons (SIPA [French acronym for System of Integrated Care for Older Persons]) was compared to usual care with a randomized control trial. SIPA offered community-based care with local agencies responsible for the full range and coordination of community and institutional (acute and long-term) health and social services. Primary outcomes were utilization and public costs of institutional and community care. Secondary outcomes included health status, satisfaction with care, caregiver burden, and out-of-pocket expenses. RESULTS: Accessibility was increased for health and social home care with increased intensification of home health care. There was a 50% reduction in hospital alternate level inpatient stays ("bed blockers") but no significant differences in utilization and costs of emergency department, hospital acute inpatient, and nursing home stays. For all study participants, average community costs per person were C dollar 3390 higher in the SIPA group but institutional costs were C dollar 3770 lower with, as hypothesized, no difference in total overall costs per person in the two groups. Satisfaction was increased for SIPA caregivers with no increase in caregiver burden or out-of-pocket costs. As expected, there was no difference in health outcomes. CONCLUSIONS: Integrated systems appear to be feasible and have the potential to reduce hospital and nursing home utilization without increasing costs."

Author: Applebaum, R.; Straker, J.; Mehdizadeh, S.; *et al*
Article Title: Using high-intensity care management to integrate acute and long-term care services: substitute for large scale system reform?
Journal Name: *Care management journals: Journal of case management; The journal of long term home health care*
Date, Volume, Issue, Page#: Spring 2002, Vol. 3, Iss. 3, p. 113
Abstract: "This study evaluates a demonstration that used high intensity care management to improve integration between the acute and long-term care service systems. The demonstration intervention included the use of clinical nurse care manager, supervised by a geriatrician, to supplement an existing in-home care management system. Chronically disabled home care

clients age 60 and over were randomly assigned (N = 308) to receive enhanced clinical services plus traditional care management, or to the control group, to receive the normal care management services provided. Treatment group members were expected to experience lower use of hospitals and nursing homes and lower overall health and long-term care costs. Research subjects were followed for up to 18 months using Medicare records and mortality data. A subsample (N = 150) also received in-person interviews to cover a range of health and social outcomes anticipated as a result of the intervention. Although there was some variation in health use and cost across treatment and control groups over the 18 month time period, the overall conclusion is that there were no differences between groups on any of the outcome variables examined. Efforts to integrate the acute and long-term care systems have proven to be difficult. This intervention, which attempted to create integration through high intensity care managers, but without financial or regulatory incentives, was simply unable to create enough change in the care system to produce significant change for the clients served."

Author: Bernabei, R.; Landi, F.; Gambassi, G.; *et al*
Article Title: Randomised trial of impact of model of integrated care and case management for older people living in the community
Journal Name: *BMJ (Clinical research ed.)*
Date, Volume, Issue, Page#: 39570 1998, Vol. 316, Iss. 7141, p. 1348
Abstract: "OBJECTIVE: To evaluate the impact of a programme of integrated social and medical care among frail elderly people living in the community. DESIGN: Randomised study with 1 year follow up. SETTING: Town in northern Italy (Rovereto). SUBJECTS: 200 older people already receiving conventional community care services. INTERVENTION: Random allocation to an intervention group receiving integrated social and medical care and case management or to a control group receiving conventional care. MAIN OUTCOME MEASURES: Admission to an institution, use and costs of health services, variations in functional status. RESULTS: Survival analysis showed that admission to hospital or nursing home in the intervention group occurred later and was less common than in controls (hazard ratio 0.69; 95% confidence interval 0.53 to 0.91). Health services were used to the same extent, but control subjects received more frequent home visits by general practitioners. In the intervention group the estimated financial savings were in the order of 1125 ($1800) per year of follow up. The intervention group had improved physical function (activities of daily living score improved by 5.1% v 13.0% loss in controls; P<0.001). Decline of cognitive status (measured by the short portable mental status questionnaire) was also reduced (3.8% v 9.4%; P<0.05). CONCLUSION: Integrated social and medical care with case management programmes may provide a cost effective approach to reduce admission to institutions and functional decline in older people living in the community."

Author: Boult, Chad; Green, Ariel Frank; Boult, Lisa B.; *et al*
Article Title: Successful models of comprehensive care for older adults with chronic conditions: Evidence for the Institute of Medicine's 'Retooling for an Aging America' report
Journal Name: *Journal of the American Geriatrics Society*
Date, Volume, Issue, Page#: 12 2009, Vol. 57, Iss. 12, p. 2328
Abstract: The quality of chronic care in America is low, and the cost is high. To help inform efforts to overhaul the ailing U.S. healthcare system, including those related to the "medical home," models of comprehensive health care that have shown the potential to improve the quality, efficiency, or health-related outcomes of care for chronically ill older persons were identified. Using multiple indexing terms, the MEDLINE database was searched for articles

published in English between January 1, 1987, and May 30, 2008, that reported statistically significant positive outcomes from high-quality research on models of comprehensive health care for older persons with chronic conditions. Each selected study addressed a model of comprehensive health care; was a meta-analysis, systematic review, or trial with an equivalent concurrent control group; included an adequate number of representative, chronically ill participants aged 65 and older; used valid measures; used reliable methods of data collection; analyzed data rigorously; and reported significantly positive effects on the quality, efficiency, or health-related outcomes of care. Of 2,714 identified articles, 123 (4.5%) met these criteria. Fifteen models have improved at least one outcome: interdisciplinary primary care (1), models that supplement primary care (8), transitional care (1), models of acute care in patients' homes (2), nurse-physician teams for residents of nursing homes (1), and models of comprehensive care in hospitals (2). Policy makers and healthcare leaders should consider including these 15 models of health care in plans to reform the U.S. healthcare system. The Centers for Medicare and Medicaid Services would need new statutory flexibility to pay for care by the nurses, social workers, pharmacists, and physicians who staff these promising models. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Author: Boult, Chad; Boult, Lisa B.; Morishita, Lynne; *et al*
Article Title: A randomized clinical trial of outpatient geriatric evaluation and management
Journal Name: *Journal of the American Geriatrics Society*
Date, Volume, Issue, Page#: 4 2001, Vol. 49, Iss. 4, p. 351
Abstract: "Measured the effects of outpatient geriatric evaluation and management (GEM) on high-risk older persons' functional ability and use of health services in a randomized clinical trial. 568 community-dwelling Medicare beneficiaries age 70 yrs and older who were at high risk for hospital admission in the future were randomized into GEM (experimental Ss) or usual care groups (control Ss). Experimental Ss received a comprehensive assessment followed by interdisciplinary primary care. Functional ability, restricted activity days, bed disability days, depressive symptoms, mortality, Medicare payments, and use of health services were measured. Intention-to-treat analysis showed that the experimental Ss were significantly less likely than the controls to lose functional ability, to experience increased health-related restrictions in their daily activities, to have possible depression, or to use home healthcare services during the 12-18 mo after randomization. Mortality, use of most health services, and total Medicare payments did not differ significantly between the 2 groups. The intervention cost $1,350 per person. Thus, targeted outpatient geriatric evaluation and management slows functional decline. (PsycINFO Database Record (c) 2007 APA, all rights reserved)"

Author: Coleman, E. A.; Parry, C.; Chalmers, S.; *et al*
Article Title: The care transitions intervention: results of a randomized controlled trial.
Journal Name: *Archives of Internal Medicine*
Date, Volume, Issue, Page#: 39716 2006, Vol. 166, Iss. 17, p. 1822
Abstract: BACKGROUND: Patients with complex care needs who require care across different health care settings are vulnerable to experiencing serious quality problems. A care transitions intervention designed to encourage patients and their caregivers to assert a more active role during care transitions may reduce rehospitalization rates. METHODS: Randomized controlled trial. Between September 1, 2002, and August 31, 2003, patients were identified at the time of hospitalization and were randomized to receive the intervention or usual care. The setting was a large integrated delivery system located in Colorado. Subjects

(N = 750) included community-dwelling adults 65 years or older admitted to the study hospital with 1 of 11 selected conditions. Intervention patients received (1) tools to promote cross-site communication, (2) encouragement to take a more active role in their care and to assert their preferences, and (3) continuity across settings and guidance from a "transition coach." Rates of rehospitalization were measured at 30, 90, and 180 days. RESULTS: Intervention patients had lower rehospitalization rates at 30 days (8.3 vs 11.9, P = .048) and at 90 days (16.7 vs 22.5, P = .04) than control subjects. Intervention patients had lower rehospitalization rates for the same condition that precipitated the index hospitalization at 90 days (5.3 vs 9.8, P = .04) and at 180 days (8.6 vs 13.9, P = .046) than controls. The mean hospital costs were lower for intervention patients ($2058) vs controls ($2546) at 180 days (log-transformed P = .049). CONCLUSION: Coaching chronically ill older patients and their caregivers to ensure that their needs are met during care transitions may reduce the rates of subsequent rehospitalization.

Author: Counsell, S. R.; Callahan, C. M.; Tu, W.; *et al*
Article Title: Cost analysis of the geriatric resources for assessment and care of elders care management intervention
Journal Name: *Journal of the American Geriatrics Society*
Date, Volume, Issue, Page#: 8 2009, Vol. 57, Iss. 8, p. 1420
Abstract: OBJECTIVES: To provide, from the healthcare delivery system perspective, a cost analysis of the Geriatric Resources for Assessment and Care of Elders (GRACE) intervention, which is effective in improving quality of care and outcomes. DESIGN: Randomized controlled trial with physicians as the unit of randomization. SETTING: Community-based primary care health centers. PARTICIPANTS: Nine hundred fifty-one low-income seniors aged 65 and older; 474 participated in the intervention and 477 in usual care. INTERVENTION: Home-based care management for 2 years by a nurse practitioner and social worker who collaborated with the primary care physician and a geriatrics interdisciplinary team and were guided by 12 care protocols for common geriatric conditions. MEASUREMENTS: Chronic and preventive care costs, acute care costs, and total costs in the full sample (n=951) and predefined high-risk (n=226) and low-risk (n=725) groups. RESULTS: Mean 2-year total costs for intervention patients were not significantly different from those for usual care patients in the full sample ($14,348 vs $11,834; P=.20) and high-risk group ($17,713 vs $18,776; P=.38). In the high-risk group, increases in chronic and preventive care costs were offset by reductions in acute care costs, and the intervention was cost saving during the postintervention, or third, year ($5,088 vs $6,575; P<.001). Mean 2-year total costs were higher in the low-risk group ($13,307 vs $9,654; P=.01). CONCLUSION: In patients at high risk of hospitalization, the GRACE intervention is cost neutral from the healthcare delivery system perspective. A cost-effectiveness analysis is needed to guide decisions about implementation in low-risk patients.

Author: Engelhardt, Joseph B.; Toseland, Ronald W.; Gao, Jian; *et al*
Article Title: Long-Term Effects of Outpatient Geriatric Evaluation and Management on Health Care Utilization, Cost, and Survival
Journal Name: *Research on Social Work Practice*
Date, Volume, Issue, Page#: 1 2006, Vol. 16, Iss. 1, p. 20
Abstract: "Purpose: The long-term effectiveness and efficiency of an outpatient geriatric evaluation and management (GEM) program was compared to usual primary care (UPC). Design and Method: A randomized controlled group design was used. Health care utilization,

cost of care, and survival were assessed during a 48-month period among a sample of 160 male veterans age 55 and over who were above-average users of outpatient services. Results: The results indicate that GEM patients incurred significantly lower overall health care costs than UPC patients by 24 months and that cost savings plateaued during the 24- to 48-month period. Cost savings were due primarily to fewer hospital days of care. No significant differences were found in survival. Implications: Results of this follow-up study suggest that outpatient GEM offers a specialized health delivery option for frail older persons that may reduce costs over the long term without having a negative impact on survival rates. (PsycINFO Database Record (c) 2007 APA, all rights reserved) (from the journal abstract)"

Author: Enguidanos, Susan M.; Jamison, Paula M.
Article Title: Moving from tacit knowledge to evidence-based practice: the Kaiser Permanente community partners study for older adults
Journal Name: *Home health care services quarterly*
Date, Volume, Issue, Page#: 2006, Vol. 25, Iss. 39449, p. 13
Abstract: "Investigated, in a managed care setting, to what extent geriatric care management (GCM) or a purchase-of-service intervention would lower barriers to home and community-based services and, in doing so, lower medical care costs, increase satisfaction with care, improve care plan compliance, and improve members' perception of quality of life. All patients in Kaiser Permanente's TriCentral service area in California referred for GCM were screened for study eligibility, and 451 eligible participants aged 65 or older (mean age 79) were randomly assigned to 1 of 4 groups: GCM information by mail, telephone care management, GCM, and GCM with purchase of service (GCM plus up to $2,000 of designated, paid services in the first 6 months of GCM). The GCM team consisted of 2 social workers who provided telephone care management and 6 social workers and nurses who conducted in-home care management. Participants responded to telephone interviews at baseline and 12 months following enrollment. Measures included the Burden Interview, Katz Activities of Daily Living Scale, Independent Activities of Daily Living Scale, Memory and Behavior Problems Checklist, Reid-Gundlach Satisfaction with Services instrument, and Telephone Interview for Cognitive Status. Results indicated that none of the interventions studied had a significant impact on the dependent variables being tested. It is concluded that higher, more costly levels of GCM do not measurably improve patient outcomes in terms of functioning, service use, depression, caregiver burden, and cognition. As a result of these findings, new models of GCM were developed that incorporated evidence-based clinical techniques and have shown improved performance on the variables examined in the present study. (KM) (AgeLine Database, copyright 2006 AARP, all rights reserved)"

Author: Ettner, S. L.; Kotlerman, J.; Afifi, A.; *et al*
Article Title: An alternative approach to reducing the costs of patient care? A controlled trial of the multi-disciplinary doctor-nurse practitioner (MDNP) model.
Journal Name: *Medical decision making : an international journal of the Society for Medical Decision Making*
Date, Volume, Issue, Page#: Jan-Feb 2006, Vol. 26, Iss. 1, p. 9
Abstract: "OBJECTIVE: Hospitals adapt to changing market conditions by exploring new care models that allow them to maintain high quality while containing costs. The authors examined the net cost savings associated with care management by teams of physicians and nurse practitioners, along with daily multidisciplinary rounds and postdischarge patient follow-up. METHODS: One thousand two hundred and seven general medicine inpatients in

an academic medical center were randomized to the intervention versus usual care. Intervention costs were compared to the difference in nonintervention costs, estimated by comparing changes between preadmission and postadmission in regression-adjusted costs for intervention versus usual care patients. Intervention costs were calculated by assigning hourly costs to the time spent by different providers on the intervention. Patient costs during the index hospital stay were estimated from administrative records and during the 4-month follow-up by weighting self-reported utilization by unit costs. RESULTS: Intervention costs were $1187 per patient and associated with a significant $3331 reduction in nonintervention costs. About $1947 of the savings were realized during the initial hospital stay, with the remainder attributable to reductions in postdischarge service use. After adjustment for possible attrition bias, a reasonable estimate of the cost offset was $2165, for a net cost savings of $978 per patient. Because health outcomes were comparable for the 2 groups, the intervention was cost-effective. CONCLUSIONS: Wider adoption of multidisciplinary interventions in similar settings might be considered. The savings previously reported with hospitalist models may also be achievable with other models that focus on efficient inpatient care and appropriate postdischarge care."

Author: Gilmer, Todd P.; Roze, Stephane; Valentine, William J.
Article Title: Cost-effectiveness of diabetes case management for low-income populations (Provisional record)
Journal Name: *NHS Economic Evaluation Database (NHSEED)*
Date, Volume, Issue, Page#: Issue 4, John Wiley & Sons, Ltd. Chichester 2008, Vol. , Iss. , p. 0
Evaluator abstract Objective. To evaluate the cost-effectiveness of Project Dulce, a culturally specific diabetes case management and self-management training program, in four cohorts defined by insurance status. Data Sources/Study Setting. Clinical and cost data on 3,893 persons with diabetes participating in Project Dulce were used as inputs into a diabetes simulation model. Study Design. The Center for Outcomes Research Diabetes Model, a published, peer-reviewed and validated simulation model of diabetes, was used to evaluate life expectancy, quality-adjusted life expectancy (QALY), cumulative incidence of complications and direct medical costs over patient lifetimes (40-year time horizon) from a third-party payer perspective. Cohort characteristics, treatment effects, and case management costs were derived using a difference in difference design comparing data from the Project Dulce program to a cohort of historical controls. Long-term costs were derived from published U.S. sources. Costs and clinical benefits were discounted at 3.0 percent per annum. Sensitivity analyses were performed. Principal Findings. Incremental cost-effectiveness ratios of $10,141, $24,584, $44,941, and $69,587 per QALY gained were estimated for Project Dulce participants versus control in the uninsured, County Medical Services, Medi-Cal, and commercial insurance cohorts, respectively. Conclusions. The Project Dulce diabetes case management program was associated with cost-effective improvements in quality-adjusted life expectancy and decreased incidence of diabetes-related complications over patient lifetimes. Diabetes case management may be particularly cost effective for low-income populations.

Author: Graves, N.; Courtney, M.; Edwards, H.; *et al*
Article Title: Cost-effectiveness of an intervention to reduce emergency re-admissions to hospital among older patients
Journal Name: *PloS one*
Date, Volume, Issue, Page#: 40465 2009, Vol. 4, Iss. 10, p. e7455
Abstract: Background: The objective is to estimate the cost-effectiveness of an intervention that reduces hospital re-admission among older people at high risk. A cost-effectiveness model to estimate the costs and health benefits of the intervention was implemented. Methodology/principal findings: The model used data from a randomised controlled trial conducted in an Australian tertiary metropolitan hospital. Participants were acute medical admissions aged >65 years with at least one risk factor for re-admission: multiple comorbidities, impaired functionality, aged >75 years, recent multiple admissions, poor social support, history of depression. The intervention was a comprehensive nursing and physiotherapy assessment and an individually tailored program of exercise strategies and nurse home visits with telephone follow-up; commencing in hospital and continuing following discharge for 24 weeks. The change to cost outcomes, including the costs of implementing the intervention and all subsequent use of health care services, and, the change to health benefits, represented by quality adjusted life years, were estimated for the intervention as compared to existing practice. The mean change to total costs and quality adjusted life years for an average individual over 24 weeks participating in the intervention were: cost savings of $333 (95% Bayesian credible interval $ -1,932:1,282) and 0.118 extra quality adjusted life years (95% Bayesian credible interval 0.1:0.136). The mean net-monetary-benefit per individual for the intervention group compared to the usual care condition was $7,907 (95% Bayesian credible interval $5,959:$9,995) for the 24 week period. Conclusions: The estimation model that describes this intervention predicts cost savings and improved health outcomes. A decision to remain with existing practices causes unnecessary costs and reduced health. Decision makers should consider adopting this program for elderly hospitalised patients.

Author: Hughes, S. L.; Finkel, S.; Harter, K.; *et al*
Article Title: Evaluation of the Managed Community Care Demonstration Project.
Journal Name: *Journal of aging and health*
Date, Volume, Issue, Page#: Feb 2003, Vol. 15, Iss. 1, p. 246
Abstract: "The purpose of this article is to describe the impact of a capitated community-care demonstration in Illinois that attempted to increase the range of services provided while constraining overall costs. The authors examined the implementation and outcomes, using pretest and posttest measures of client satisfaction, range of services, agency costs, and nursing home admissions. Demonstration clients (n = 752) had a mean age of 80, and an average of two activities of daily living impairments. The number of covered services increased from 3 at baseline to 14 during the demonstration, whereas the mean number of services used increased from 1 to 2.5. Satisfaction with care remained stable and agency average costs declined. The capitation rate more closely approximated agency costs than customary fee-for-service (FFS) and provided a fixed deductible for clients. No difference was seen in nursing home admissions compared to clients served under FFS in the same geographic location. These results imply that capitation increased the range of covered services, maintained client satisfaction, increased efficiency, and did not affect rate of nursing home admissions. Capitated home- and community-based services needs to be tested in other locations and with other providers."

Author: Katon, W.; Unutzer, J.; Fan, M. Y.; *et al*
Article Title: Cost-effectiveness and net benefit of enhanced treatment of depression for older adults with diabetes and depression.
Journal Name: *Diabetes care*
Date, Volume, Issue, Page#: Feb 2006, Vol. 29, Iss. 2, p. 265
Abstract: "OBJECTIVE: To determine the incremental cost-effectiveness and net benefit of a depression collaborative care program compared with usual care for patients with diabetes and depression. Research design and methods: This article describes a preplanned subgroup analysis of patients with diabetes from the Improving Mood-Promoting Access to Collaborative (IMPACT) randomized controlled trial. The setting for the study included 18 primary care clinics from eight health care organizations in five states. A total of 418 of 1,801 patients randomized to the IMPACT intervention (n = 204) versus usual care (n = 214) had coexisting diabetes. A depression care manager offered education, behavioral activation, and a choice of problem-solving treatment or support of antidepressant management by the primary care physician. The main outcomes were incremental cost-effectiveness and net benefit of the program compared with usual care. RESULTS: Relative to usual care, intervention patients experienced 115 (95% CI 72-159) more depression-free days over 24 months. Total outpatient costs were 25 dollars (95% CI -1,638 to 1,689) higher during this same period. The incremental cost per depression-free day was 25 cents (-14 dollars to 15 dollars) and the incremental cost per quality-adjusted life year ranged from 198 dollars (144-316) to 397 dollars (287-641). An incremental net benefit of 1,129 dollars (692-1,572) was found. CONCLUSIONS: The IMPACT intervention is a high-value investment for older adults with diabetes; it is associated with high clinical benefits at no greater cost than usual care."

Author: Katon, W.; Russo, J.; Von Korff, M.; *et al*
Article Title: Long-term effects of a collaborative care intervention in persistently depressed primary care patients.
Journal Name: *Journal of general internal medicine: official journal of the Society for Research and Education in Primary Care Internal Medicine*
Date, Volume, Issue, Page#: Oct 2002, Vol. 17, Iss. 10, p. 741
Abstract: "OBJECTIVE: A previous study described the effect of a collaborative care intervention on improving adherence to antidepressant medications and depressive and functional outcomes of patients with persistent depressive symptoms 8 weeks after the primary care physician initiated treatment. This paper examined the 28-month effect of this intervention on adherence, depressive symptoms, functioning, and health care costs. DESIGN: Randomized trial of stepped collaborative care intervention versus usual care. SETTING: HMO in Seattle, Wash. PATIENTS: Patients with major depression were stratified into severe and moderate depression groups prior to randomization. INTERVENTIONS: A multifaceted intervention targeting patient, physician, and process of care, using collaborative management by a psychiatrist and a primary care physician. MEASURES AND MAIN RESULTS: The collaborative care intervention was associated with continued improvement in depressive symptoms at 28 months in patients in the moderate-severity group ($F_{1,87} = 8.65$; $P = .004$), but not in patients in the high-severity group ($F_{1,51} = 0.02$; $P = .88$) Improvements in the intervention group in antidepressant adherence were found to occur for the first 6 months ($\chi^2(1) = 8.23$; $P < .01$) and second 6-month period ($\chi^2(1) = 5.98$; $P < .05$) after randomization in the high-severity group and for 6 months after randomization in the moderate-severity group($\chi^2(1) = 6.10$; $P < .05$). There were no

significant differences in total ambulatory costs between intervention and control patients over the 28-month period ($F_{1,180} = 0.77$; P =.40). CONCLUSIONS: A collaborative care intervention was associated with sustained improvement in depressive outcomes without additional health care costs in approximately two thirds of primary care patients with persistent depressive symptoms."

Author: Naylor, Brooten; D., Campbell; R., Jacobsen; *et al*
Article Title: Comprehensive discharge planning and home follow-up of hospitalized elders: a randomized clinical trial.
Journal Name: *JAMA: Journal of the American Medical Association*
Date, Volume, Issue, Page#: 39495 1999, Vol. 281, Iss. 7, p. 613
Abstract: Context Comprehensive discharge planning by advanced practice nurses has demonstrated short-term reductions in readmissions of elderly patients, but the benefits of more intensive follow-up of hospitalized elders at risk for poor outcomes after discharge has not been studied. Objective To examine the effectiveness of an advanced practice nurse–centered discharge planning and home follow-up intervention for elders at risk for hospital readmissions. Design Randomized clinical trial with follow-up at 2, 6, 12, and 24 weeks after index hospital discharge. Setting Two urban, academically affiliated hospitals in Philadelphia, Pa. Participants Eligible patients were 65 years or older, hospitalized between August 1992 and March 1996, and had 1 of several medical and surgical reasons for admission. Intervention group patients received a comprehensive discharge planning and home follow-up protocol designed specifically for elders at risk for poor outcomes after discharge and implemented by advanced practice nurses. Main Outcome Measures Readmissions, time to first readmission, acute care visits after discharge, costs, functional status, depression, and patient satisfaction. Results A total of 363 patients (186 in the control group and 177 in the intervention group) were enrolled in the study; 70% of intervention and 74% of control subjects completed the trial. Mean age of sample was 75 years; 50% were men and 45% were black. By week 24 after the index hospital discharge, control group patients were more likely than intervention group patients to be readmitted at least once (37.1% vs 20.3%; P<.001). Fewer intervention group patients had multiple readmissions (6.2% vs 14.5%;P = .01) and the intervention group had fewer hospital days per patient (1.53 vs 4.09 days; P<.001). Time to first readmission was increased in the intervention group (P<.001). At 24 weeks after discharge, total Medicare reimbursements for health services were about $1.2 million in the control group vs about $0.6 million in the intervention group (P<.001). There were no significant group differences in postdischarge acute care visits, functional status, depression, or patient satisfaction. Conclusions An advanced practice nurse–centered discharge planning and home care intervention for at-risk hospitalized elders reduced readmissions, lengthened the time between discharge and readmission, and decreased the costs of providing health care. Thus, the intervention demonstrated great potential in promoting positive outcomes for hospitalized elders at high risk for rehospitalization while reducing costs.

Author: Peikes, D.; Chen, A.; Schore, J.; *et al*
Article Title: Effects of care coordination on hospitalization, quality of care, and health care expenditures among Medicare beneficiaries: 15 randomized trials.
Journal Name: *JAMA : the journal of the American Medical Association*
Date, Volume, Issue, Page#: Feb 2009, Vol. 301, Iss. 6, p. 603
Abstract: CONTEXT: Medicare expenditures of patients with chronic illnesses might be reduced through improvements in care, patient adherence, and communication. OBJECTIVE:

To determine whether care coordination programs reduced hospitalizations and Medicare expenditures and improved quality of care for chronically ill Medicare beneficiaries. DESIGN, SETTING, AND PATIENTS: Eligible fee-for-service Medicare patients (primarily with congestive heart failure, coronary artery disease, and diabetes) who volunteered to participate between April 2002 and June 2005 in 15 care coordination programs (each received a negotiated monthly fee per patient from Medicare) were randomly assigned to treatment or control (usual care) status. Hospitalizations, costs, and some quality-of-care outcomes were measured with claims data for 18 309 patients (n = 178 to 2657 per program) from patients' enrollment through June 2006. A patient survey 7 to 12 months after enrollment provided additional quality-of-care measures. INTERVENTIONS: Nurses provided patient education and monitoring (mostly via telephone) to improve adherence and ability to communicate with physicians. Patients were contacted twice per month on average; frequency varied widely. MAIN OUTCOME MEASURES: Hospitalizations, monthly Medicare expenditures, patient-reported and care process indicators. RESULTS: Thirteen of the 15 programs showed no significant (P<.05) differences in hospitalizations; however, Mercy had 0.168 fewer hospitalizations per person per year (90% confidence interval [CI], -0.283 to -0.054; 17% less than the control group mean, P=.02) and Charlestown had 0.118 more hospitalizations per person per year (90% CI, 0.025-0.210; 19% more than the control group mean, P=.04). None of the 15 programs generated net savings. Treatment group members in 3 programs (Health Quality Partners [HQP], Georgetown, Mercy) had monthly Medicare expenditures less than the control group by 9% to 14% (-$84; 90% CI, -$171 to $4; P=.12; -$358; 90% CI, -$934 to $218; P=.31; and -$112; 90% CI, -$231 to $8; P=.12; respectively). Savings offset fees for HQP and Georgetown but not for Mercy; Georgetown was too small to be sustainable. These programs had favorable effects on none of the adherence measures and only a few of many quality of care indicators examined. CONCLUSIONS: Viable care coordination programs without a strong transitional care component are unlikely to yield net Medicare savings. Programs with substantial in-person contact that target moderate to severe patients can be cost-neutral and improve some aspects of care.

Author: Rubin, C. D.; Sizemore, M. T.; Loftis, P. A.; *et al*
Article Title: The Effect of Geriatric Evaluation and Management on Medicare Reimbursement in a Large Public Hospital - a Randomized Clinical-Trial
Journal Name: *Journal of the American Geriatrics Society*
Date, Volume, Issue, Page#: OCT 1992, Vol. 40, Iss. 10, p. 989
Abstract: "Objective: To study the effect of a geriatric evaluation and management program on health care charges and Medicare reimbursement. Design: Prospective randomized controlled trial during a 1-year study period. Setting: Large medical school-affiliated public hospital in an urban community. Subjects: Patients at least 70 years old admitted to the medicine service were screened and randomized into two groups of 100 patients each. Intervention: Patients randomized to the experimental group underwent initial comprehensive geriatric evaluation and once discharged from the hospital were enrolled in a geriatric care management and treatment program. The control group received usual care only. The major intervention of this study was in outpatient long-term care. Main Outcome Measure: Total charges for services billed to Medicare Part A and Part B and total Medicare reimbursement. The Medicare charge and reimbursement data were obtained by use of the Medicare Automated Data Retrieval. System, a linked Medicare Part A and Part B utilization file. Results: Total charges and reimbursement were greater for the control group but not significantly so. Subset analysis revealed significantly greater inpatient charges (P < 0.03) and

Medicare reimbursement ($P < 0.005$) for the control patients and a greater likelihood of utilization of home health care services in the experimental group ($P < 0.01$). Conclusion: A geriatric evaluation and management program appeared to shift utilization and Medicare expenditures from inpatient services to home health care services. There was no evidence that the experimental program resulted in increased expenditures for Medicare. In selected populations, geriatric evaluation and management programs may contribute to cost containment."