

Included studies showing a decrease in LOS when compared with control group.

Author	Design	Sample size	Intervention	Control	Study Population	Objective	Findings pertaining to objective	Members of interdisciplinary team	Country	Setting	Discharge Plans ?	Outcome measures	LOS Outcome results	Length of study
<b>Beland 2006</b> (5191:SIPA)	RCT	1309 Intervention: 656 Comparison: 653	Intensified community-based coordinated services interventions (SIPA)	Usual Care	Community-dwelling elderly with significant functional difficulties. Age: older than 64	Avoiding inappropriate hospitalization.	"A reduction in overall acute hospital and NH (long-term institutional care) utilization associated with an ...increase in community care."	Case manager (nurse or SW), community nurses, SW, occupational therapists, physiotherapists, homemakers, physician, pharmacist, community organizer	Quebec, Canada.	Community based, Hospital and Home	"Actively followed patients throughout the care trajectory." "Delivering through to community."	Utilization and costs of care, health status, satisfaction with care, caregiver burden	↓LOS: 50% reduction in acute hospital patients that would become "bed-blockers" (waiting to be placed) i.e reducing hospital utilization.	22 months (avg)
<b>Capomolla 2002</b>	RCT	234 Intervention: 112 Comparison: 122	Multidisciplinary day hospital	Usual Care (community)	Discharge from Chronic Heart Failure unit. Age: 56 ± 10	Contain repeated admissions.	"Open-access service reduced potential hospital admissions by 79%...re-hospitalization was reduced by 72%." "Reduced absorption of resources and their better allocation."	Cardiologist, nurse, physiotherapist, dietician, psychologist, social assistant.	Pavia, Italy	Day hospital or home	"Individualized HF (heart failure) management plan." "extensive outpatient telephone >	Mortality, re-admissions, functional outcomes, cost,	↓Patients re-hospitalized, (I) 9 vs (C) 37 and number of re-hospitalizations (I)13 vs (C) 78, both p<0.05	9-15 months
<b>Kalra 2005</b>	RCT	457 (ITT) Intervention: SU=152, ST=152 Comp HC=153	Stroke Unit and Stroke Team	Home Care	Stroke patients. Average age: 76.8	Compare outcomes between stroke patient managed on the stroke unit, on general wards with stroke team support, or at home by specialist domiciliary team."	Stroke units were found to be more effective than Stroke team or home care in "reducing mortality, institutionalization, and dependence after stroke." "Stroke Unit is a more cost-effective intervention than either stroke team or home care."	Hospital staff, community health services, social service managers and carers. Physical therapist, occupational therapist, recreation therapist MD, DO, nurse, NP, or PA, Social worker	UK, SE England	Hospital (suburban) or home	HC: had an "individualized integrated care pathway." ST continuity of care across hos/comm. SU :discharge plans, post-dis support.	LOS, prevention of institutionalization cost, satisfaction, QOL, functional recovery.	↓LOS Stroke Unit vs ST and HC (mean) SU=32 vs ST=29.5 comparable and, from HC=48.9	12 months
<b>McNamee 1998</b>	RCT	92 Intervention: 46 Comparison: 46	Early supported discharge	Conventional hospital care	Admitted to hospital from home with acute stroke. Median age: 73	Does early supported discharge with stroke patients reduce LOS and cost?	"Reduced hospital lengths of stay of up to 50% were achieved. The saving brought about...are not real savings but are estimates of the value of shorter LOS, based on the assumption that released beds will be used by patients of similar needs."	Service coordinator, physiotherapist, occupational therapist, home care, and part-time SW, speech therapist.	UK, England Newcastle upon Tyne	Hospital	"Members of the team acted as an 'in-reach' service, planning and organizing discharge..." Rehab in home after dis.	Amount of health and personal social services.	↓LOS, mean number of hospital days, early support, 27 vs 54 in conventional care. (p<0.02 for diff)	6 months
<b>Nikolaus 1999</b>	RCT	545 Intervention: 360 Comparison: 185	Comp. assessment and post-discharge home (intervention), OR Comp. assess alone (assessment)	Usual Care	Admitted to hospital with acute illness from home. Over 65.	Is geriatric evaluation combined with post discharge effective in reducing re-hospitalization?	"We demonstrated that the length of the initial hospital stay could be considerably shortened by our home intervention team. While out intervention could not prevent admissions to nursing homes, it could delay them. Patients in the intervention group were able to live longer at home."	MD, Nurse, NP or PA physiotherapist, occupational, recreational therapist, SW and secretary.	Germany, Heidelberg	Hospital and Home	"Post-discharge follow-up" At least 1 home visit within 3 days, follow-up at home at 3 months.	Survival, functional status, re-hospitalization, costs, LOS.	↓LOS Home intervention vs assessment alone vs control p<0.05	12 months

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<b>Asplund 2000</b>	RCT	413 Intervention: 190 Comparison: 223	Hospital Care in an acute geriatrics based ward (AGW)	General medical ward	Older patients with acute medical illnesses. Aged 70 and older	The effects of residence in an acute geriatrics-based ward (AGW) with emphasis on early rehab. and discharge planning.	This approach with emphasis on early rehab and discharge planning shortened the LOS and may have reduced the need for long-term institutional living.	Nurses aids, dietician, geriatrician, Physical, occupational and recreation therapist MD, nurse, NP or PA , and SW	Sweden, University Hospital	Acute Geriatric ward	Yes, "intense" with family meetings and involvement with social services. Follow-up at 3 months, by visit to home, hospital or Inst.	1) Death, 2)ADL (including LOS), 3)psychological well-being 4)resource consumption	↓LOS: the mean length of stay for the intervention group was 1.4 days shorter compared to the control group. (adjusted) $p=0.03$	3 months
<b>Day 2001</b>	RCT	71 Intervention: 38 Comparison: 33	Early intervention, followed by accelerated rehabilitation conducted in the acute care ward	Standard care followed by transfer to a Geriatric Assessment and Rehabilitation Unit	Patients with proximal femoral fractures. Adults 65 and older	Effort to safely accelerate rehabilitation of patients with proximal femoral fractures	Accelerated rehabilitation for patients with a proximal femoral fracture in a major teaching hospital can be accomplished safely.	Physician/MD, DO , orthopedic-geriatrics liaison team (unspecified)	Brisbane, Australia	Royal Brisbane Hospital	None specified, with many patients returning to nursing homes. Follow-up at 1, 6, and 12 months. No active support at home stated.	Differences in LOS, survival, level of recovery and mobility, amount of postoperative analgesia, occurrence of adverse medical events and readmission to hospital following discharge	↓LOS : "The mean length of stay was significantly longer in the standard care patients compared with the intervention patients."	12 months
<b>Del Sindaco 2007</b>	RCT	173 Intervention: 86 Comparison: 87	Interdisciplinary DMP involving cardiologists, primary care physicians and nurses combining pre- and post-discharge care	Usual care	Elderly heart failure patients. Mean age 77	Determine the long-term efficacy of a hybrid disease management programs (DMP) in consecutive older outpatients	At 2-year follow-up all-cause and heart failure admissions as well as the length of hospital stay were reduced.	Physician/MD, DO, registered nurse, nurse practitioner, or physician assistant	Italy	Acute care hospital/ medical center	Yes, education, nurse follow-up phone calls.	Mortality, readmissions, quality of life and functional status	↓LOS for all causes was shorter in the intervention group than the control group at 2 years. ↓LOS for heart failure hospital admissions was shorter in the intervention group than control .	24 months
<b>Leveille 1998</b>	RCT	201 Intervention: 101 Comparison: 100	Senior center-based, chronic illness self-management and disability prevention program	Usual care	Chronically ill older adults seniors aged 70 and older	What is the impact of a senior center-based, chronic illness self-management and disability prevention program.	A community-based collaboration with PC providers can improve function and reduce inpatient utilization	Registered nurse, nurse practitioner, or physician assistant, social work counseling	Northeast Seattle suburb	Senior Center	Yes. Management Plan with follow-up phones calls, but no discharge- this is community plan.	health, functioning, and healthcare utilization	↓LOS The total number of hospital days decreased markedly in the intervention group, from 116 to 33 days (72% decrease)	12 months
<b>Naylor 1999</b>	RCT	363 Intervention: 186 Comparison: 177	APN-centered comprehensive discharge planning and home follow-up	Usual care	At-risk elders hospitalized with 1 of several common medical and surgical reasons for admission	What is the effectiveness of an APN-centered comprehensive discharge planning and home follow-up	Intervention reduced readmissions, lengthened the time between discharge and readmission, and decreased the costs of providing health care.	Registered nurse, nurse practitioner, or physician assistant. Physicians, "other members of the health team."	Philadelphia, Pa. US	Two urban, academic affiliated hospitals	Yes. Comp planning and home follow-up through visits and phone.	Reduced hospital readmissions, lengthened the time to first readmission, and decreased cost of care	↓"Control group patients were more likely than intervention group patients to be readmitted at least once " during the 24 weeks following discharge	6 months

Chiu –2007														
<b>Chiu 2007</b>	<b>Synthesis</b>	323 studies identified 15 studies included <b>10 measured LOS</b>	Nurse-assisted (but includes SW) case management, post-hospital transitions for elderly	Usual Care	Various	Various	Various	Various	Various	Various	-	Mortality, Re-admissions, LOS, ED visits, Medicare expenditures.	↓LOS (7 out of 9 studies-statistically significant.)	Various
Chiu –Primary Studies														
<b>Jaarsma 1999</b>	RCT	179 Intervention: 84 Comparison: 95	Intensive, systematic, planned supportive and educational , nursing care plan, self-care	Usual Care	Heart Failure Patients Mean age: 73, 58% male	To test the effect of education and support by a nurse on self-care and resource utilization in patients with heart failure	Intensive, systematic, tailored and planned education and support by nurse results in an increase in patients' self-care behavior.	Nurse, No SW Mentioned specifically.	Maastricht, Netherlands,	University hospital	“discussed discharge” and nurse home visit	Self-care, readmission, health care resources.	↓at 9 months: Patients readmitted (I)31 (37%) vs (C)47 (50%) Chi-square =2.8, p=0.061. ↑Readmission days (I) 768 vs (C)861.	9 months
<b>Naylor 2004</b>	RCT	239 Intervention: 118 Comparison: 121	Transitional care, patients w/ CHF.	Usual Care	Heart Failure Patients Age: 65 or older	To examine the differences of a transitional care intervention delivered by advanced practice nurses to elder hospitalized with heart failure	A transitional care intervention increased the length of time between discharge and readmission or death, reduced total number of rehospitalizations.	Cardiologist, Clinical nurse, SW, pharmacist, nutritionist, physical therapist.	Philadelphia , US	Academic and community hospitals	APN designed discharge plan with team.	Time to rehospitalization, QOL, cost, patient satisfaction	↓LOS Tot. days (I) 588 vs (C) 970. Per patient mean, (I) 5 vs (C) 8, p<.071. Per rehos. pat, (I) 11 vs (C) 14.5, p<.411 (ns)	12 months
<b>Blue 2001</b>	RCT	165 Intervention: 84 Comparison: 81	Home visits, telephone, education, self-monitoring.	Usual Care	Heart Failure Patients Mean age: 74.4	To determine whether specialist nurse intervention improves outcomes in patients with chronic heart failure	Specially trained nurses can improve the outcome of patients admitted to hospital with heart failure	Healthcare and SW, as required	Glasgow	Infirmery (teaching hospital)	Not reported.	Primary end-point: death from all cause. Secondary: Death or readmission for any reason, LOS	↓LOS. 16.7 days (I) vs 10.3 days (C), p =0.081	12 months
<b>Koelling 2005</b>	RCT	223 Intervention: 107 Comparison: 116	Education, self-care	Usual Care	Heart Failure Patients Mean age: 65.0	Does patient education alone with chronic hart failure patients improve clinical outcomes?	The addition of 1 hour nurse delivered education at discharge resulted in improved clinical outcomes	Nurse. No mention of SW	Michigan, US	University hospital	1 hour nurse delivered education at discharge	Primary end points: total number of days hospitalized or death.	↓Hospitalization or death (I) 0 vs (C) 19, p=0.009	6 months
<b>Kwok 2004</b>	RCT	149 Intervention: 70 Comparison: 79	Intensive community nurse supported discharge.	Usual Care	Patients with chronic lung disease. Mean age: 75.3	How effective is an intensive community nurse supported discharge program in preventing readmissions?	No evidence that an intensive community nurse supported discharge program prevented readmissions	CN, Multidisciplinary team (unspecified) led by geriatricians. No mention SW	Hong Kong, China	2 Acute care hospitals, same region	Community nurse supported discharge program	Primary outcome: rate of unplanned readmission. Secondary; LOS	↓ND in primary outcomes or LOS. Total hospital days (I) 20.3 vs (C) 19.2, p=.410	6 months

Chiu –Primary Studies (continued)														
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<b>Lim 2003</b>	RCT	598 Intervention: 311 Comparison: 287	Coordination of community service post discharge	Usual Care	Patients in acute ward for over 48 hours and discharged home. Mean age: 76.5	Evaluate benefits of coordinating community services through Post Acute Care program.	The PAC program is beneficial in the transition from hospital to community in older patients	“health or nursing backgrounds.”	Victoria, Australia	4 university metropolitan hospitals		QOL, carer stress, mortality, readmissions, cost, LOS	↓LOS. Intervention patients fewer hospital bed-days in the 6 months Mean 3 days vs 5.2 days for control, $p=0.01$	6 months
<b>Naylor 1999</b>	RCT	363 Intervention: 177 Comparison: 186	Comprehensive discharge plan and home follow-up	Routine discharge plans	Hospitalized patients aged 65 or older	Examine the effectiveness of an APN discharge planning and home follow-up for elders at risk for re-hospitalization	An APN lengthened the time between discharge and re-admission, and decreased costs.	APN, and “coordination of needed home services.” SW not mentioned.	Pennsylvania, US	2 urban University hospitals	Comprehensive plan and home follow-up protocol designed specifically for elders at high risk for poor discharge outcomes	Readmissions, Acute care visits, cost, functional status, patient satisfaction	↓LOS (I) 270 vs (C) 760, $p<0.001$ cumulative days of re-hospitalization; secondary outcome measure	6 months
<b>Riegal 2002</b> Software developed by Pfizer. And one of the authors works at Pfizer.	RCT	358 Intervention: 130 Comparison: 228	Standardized telephonic case-management software program. CHF patients	Usual care	CHF patients, mean age 72.	Assess the effectiveness of a standard telephone case-management intervention to decrease resources.	Reduction of hospitalization, costs, and other resources was greater than comparable disease management approaches.	RN administered, with time spend as necessary with physicians, dieticians, social worker, physical therapists.	California, US	2 Southern Ca Hospitals	Not reported.	Hospitalization rates, LOS, costs, ER visits	↓LOS. Avg, No Days (I) was 46% lower at 3/ 6 months. Sign at 6 months. All cause days lower at 3/6 NS	6 months
<b>Sinclair 2005</b>	RCT	324 Intervention: 163 Comparison: 161	Assessment of Home-based nurse support.	Usual Care	Cardiac patients with suspected MI Aged 65 or older	Evaluate home-based intervention after ED admission	Patients with suspected MI, home-based nurse intervention may improve confidence, self-esteem, and reduce early hospital readmissions	Nurse and research assistant. Does not seem to be multidisciplinary, No specific mention of SW	Birmingham, UK	3 district hospitals and home	Home –base support.	Mortality, readmissions, QOL, LOS, use of services	↓LOS. Mean days in hospital, 2.9 (I) vs 4.6(C) . Mean diff. - 1.7, $p<0.05$	3 months (100 days)
<b>Young 2003</b>	RCT	146 Intervention: 75 Comparison: 71	Community-based inner-city disease management program delivered by home health nurses. Post MI patients	Usual Care	Post MI patients Mean age 70.1	Evaluate a community-based disease management program for post-MI patients	An appropriately developed and implemented community-based DMP delivered at home by nurses has a positive impact on patient outcomes	Cardiac trained home health nurses, No SW mentioned or explicit interdisciplinary team.	Toronto , Canada	Hospital affiliated with Univ Toronto	Not reported.	All cause readmissions, ER visits, services, no. of claims	No LOS measure.	1000 follow-up days

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<b>Phillips 2004</b>														
<b>Phillips 2004</b>	<b>Synthesis-meta</b>	832 studies identified 18 studies included <b>10 measured LOS</b>	Discharge planning with post discharge support. (CHF patients)	Various	Various	Various	Various	Various	Various	Various	Various	LOS, QOL, costs	↕↗ mixed results. LOS difference favored intervention, but not stat. sign. -0.37; 95% CI -0.15 to 0.60	Various
<b>Phillips Primary Studies</b>														
<b>Stewart 1998</b>	RCT	762 Intervention: 381 Comparison: 381	Home-based intervention after discharge.	Usual Care	Patients admitted to medical and surgical units and discharged home with a chronic condition.	Determine the effect of a home-based intervention on frequency of unplanned re-admissions.	Among high-risk patients HBI is beneficial in limiting unplanned admissions and reducing out-of-hospital deaths.	Study nurse evaluated psychosocial status for any additional community support. No reporting of any other members.	NW Adelaide, Australia,	Hospital	Yes. Counseled by study nurse and/or pharmacist	Readmissions, mortality, ED visits, LOS, cost	↘ LOS Days of hospitalization. (1452 vs 1766: $p < .001$ )	6 months
<b>Stewart 1999</b>	RCT	200 Intervention: 100 Comparison: 100	Multidisciplinary home-based intervention	Usual care	Patients CHF. Mean age 75.2	Measure the effects of home-based intervention on unplanned re-admissions	A home-based intervention has the potential to decrease the rate of unplanned re-admissions	Home visit by a cardiac nurse, PC, cardiologist. No SW specified on team, but it the discharge plan.	Australia,	Hospital/home	Yes. Both inpatient and community-base contact with a cardiac rehab nurse, dietician, social worker and pharmacist	Readmission rate, LOS, QOL, costs, mortality	↘ LOS Days in hospital. (460 vs 1173; $p = 0.02$ )	6 months
<b>Jaarsma 1999</b>	RCT	179 Intervention: 84 Comparison: 95	Intensive, systematic, planned supportive and educational , nursing care plan, self-care	Usual Care	Heart Failure Patients Mean age: 73, 58% male	To test the effect of education and support by a nurse on self-care and resource utilization in patients with heart failure	Intensive, systematic, tailored and planned education and support by nurse results in an increase in patients' self-care behavior.	No SW	Maastricht, Netherlands,	University hospital	"discussed discharge" and nurse home visit	Self-care, readmission, health care resources.	↘ at 9 months: Patients readmitted (I)31 (37%) vs (C)47 (50%) Chi-square =2.8, $p = 0.061$ . ↗ Readmission days (I) 768 vs (C)861.	9 months
<b>Oddone 1999</b>	RCT	443 Intervention: 222 Comparison: 221	Enhanced access to PC with CHF patients	Usual Care	Patients hospitalized with CHF. Mean age 65.1	Determine if enhanced access to primary care affects the diagnostic evaluation, pharmacologic management or health outcomes.	Enhanced access to primary care did not improve a patients' self-reported health status and was associated with more frequent hospitalizations	PC, nurse, and general internist. No specific mention of SW	US	9 VA Medical Center	Yes, nurse discussion with educational materials.	Pharmacologic management, QOL, Health care utilization readmissions	↗ The proportion of patients and the number of readmissions were higher among patients who rec'vd enhanced access	6 months

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<b>Phillips Primary Studies (continued)</b>														
<b>Rainville 1999</b>	RCT	34 Intervention: 17 Comparison: 17	Pharmacist coordinated clinical service. CHF patients	Usual Care	Heart Failure Patients Mean age 66.9	Pharmacist participation in outpatient care to evaluate the impact on clinical outcomes\reduce re-hospitalization.	A pharmacist coordinated program based in an acute care setting led to significantly fewer re-admissions for heart failure.	Physician, Nurse, Pharmacist. No mention of SW.	Vermont, US	Medical Center Hospital	Written scripts, physician instructions, nurse review of diet, treatment plans, medication plans	Primary endpoint: hospital readmission, mortality.	<b>No LOS measure.</b> 10 (58.8%) of control vs 4 (23.5%) of intervention readmitted, p< 0.05	12 months
<b>Weinberger 1996</b>	RCT	1396 Intervention: 695 Comparison: 701	Intensive primary care pre-post hospital, severely ill patients.	Usual Care	Patients hospitalized if they had been diagnosed with diabetes, COPD, or CHF. Mean age 63.0	The goal was to reduce re-admissions and ER visits, increase QoL, and satisfaction with care.	The PC intervention increased rather than decreased rate of re-hospitalization, although patients were more satisfied with their care.	One Nurse and One PC physician. No mention of SW.	US	9 VA Medical Centers	Yes, unspecified.	Readmission, rehospitalization, LOS, care satisfaction, QOL	↑LOS (I) 10.2 vs (C) 8.8, p=0.041	6 months
<b>Naylor 1994</b>	RCT	276 Intervention: 695 Comparison: 701	Comprehensive discharge planning by nurse specialists.	Medical group or Surgical Group, and Usual Care	Patients from diagnostic related groups (CHF, MI, bypass) 70 years and older	Study effects from comprehensive discharge planning designed specifically for the elderly, implemented by nurses on patient and caregiver outcomes.	Finding support the need for plans to improve outcomes and achieve cost savings. Also suggest that the plan delayed or prevented re-hospitalization.	Physician, Nurse “other members” of care team. No SW costs.	Pennsylvania, US	University hospital	Yes. Developed with patient, caregiver, physician, nurse and “other” members of team.	LOS, costs, patients and caregivers	↓LOS were less than control 2 wks and up to 4 wks after discharge (p<.05) but were similar between 6-12 wks. <b>ND</b>	3 months
<b>Naylor 1999</b>	RCT	363 Intervention: 177 Comparison: 186	Comprehensive discharge plan and home follow-up	Routine discharge plans	Hospitalized patients aged 65 or older	Examine the effectiveness of an APN discharge planning and home follow-up for elders at risk for re-hospitalization	An APN lengthened the time between discharge and re-admission, and decreased costs.	APN, and “coordination of needed home services.” SW not mentioned.	Pennsylvania, US	2 urban University hospitals	Comprehensive plan and home follow-up protocol designed specifically for elders at high risk for poor discharge outcomes	Readmissions, Acute care visits, cost, functional status, patient satisfaction	↓LOS (I) 270 vs (C) 760, p<0.001 cumulative days of re-hospitalization; secondary outcome measure	6 months
<b>Harrison 2002</b>	RCT	192 Intervention: 92 Comparison: 100	Transitional care, nurse –led intervention focused on supportive care for self-management.	Usual Care	CHF patients. Mean age 75.52	Improving hospital –to home transition with usual hospital and community nurses	Significant improvements in health-related QoL and less use of ER.	Physicians, Primary Nurses and “home-care coordinator” unspecified.	Ottawa, Canada	Large urban teaching hospital	Yes, unspecified.	ER visits, hospital readmissions	<b>No LOS measure reported.</b> Fewer intervention admitted to hospital (23%) vs Control (31%) p=0.26	3 months

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<b>Phillips Primary Studies (continued)</b>														
Laramee 2003	RCT	256 Intervention: 131 Comparison: 125	Nurse case management, early discharge planning, CC, telephone follow-up, education, optimal medications.	Usual Care	CHF patients, Mean age 70.6	To test the effect of CHF nurse case management on 90 day re-admission rates in a heterogeneous setting.	Several limitations to generalizability of the CHF CM improved outcomes link in a heterogeneous setting.	Nurse-led. Social services consulted.	Vermont, US	University Vermont Hospital (unsp)	Yes, early discharge planning, unspecified.	All-cause readmission primary endpoint. Secondary, treatment plan adherence, patient satisfaction cost, LOS.	↓ LOS for initial admission Mean (I) 5.5 (C) 6.4, p=0.10 LOS for patients with > 1 readmission Mean (I) 6.9 (C) 9.5, p=0.15 Both NS.	3 months

## EXCLUDED STUDIES

Excluded studies showing no difference or increase in LOS when compared with control group.

Author	Design	Sample Size	Intervention	Control	Study Population	Objective	Findings pertaining to Objective	Member of interdisciplinary Team	Country	Setting	Discharge plans?	Outcomes Measures	LOS outcome results	Length of Study
Bass 2003	RCT	182 Intervention: 109 Comparison: 73	Integrating Alzheimer's Association care consultation service with services of a managed care system.	No added Care consultants	Patients with dementia and their family members	Does the Alzheimer's "Association care consultation decrease service utilization, increase satisfaction with managed care and decrease caregiver depression."	Care consultation within a partnership is a promising strategy for improving selected outcomes.	Care Consultation delivered by a master's level, licensed SW. (not interdisciplinary)	Cleveland, Ohio and 4 adjacent counties	Partnership with AD association	Care consultation, not clear on any home care-not discharge	1)Service utilization, 2)satisfaction with managed care, 3)Caregiver depression, 4)care-related strain	ND Hospital Admissions, ED Visits.	12 months
Beland 2006 (3158:SIPA)	RCT	1309 Intervention: 656 Comparison: 653	Intensified community-based coordinated services interventions (SIPA)	Usual Care	Community-dwelling vulnerable older persons	"Compare the differences in utilization and costs of health and social services between SIPA and services usually available."	"The results indicate that it is possible to expect integrated service systems for frail older persons to reduce the use and costs of hospital services and nursing homes."	Physicians, case managers, nurses, social workers, occupational therapists, physiotherapists, dieticians, and homemakers.	Quebec, Canada,	Community based	-not discharge	Utilization and costs of services	ND in LOS for short-term hospitalizations	22 months (avg)
Boult 2000 (3164)	RCT	6409 Intervention: 3480 Comparison: 2929	Social Work based case management for high risk older persons	Usual managed health care	Patients 65 or older of primary care physicians in a large provider organization.	To measure the effects of SW case management on an older population's costs of health care.	"No statistically significant evidence that SW oriented case management reduces the use or the cost of health care for high-risk older people."	Nurse, dieticians SW.	San Francisco, CA Multiple sites	Support in hospital and home (person and phone)	Home visits and telephone, referred to by Primary Care office	Volume and cost of hospital, physician, case management and other health related services.	ND in LOS Exp. 1.06 days (n=3480), Control 1.14 days (n=2929)	12 months

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Cameron 2007	Synthesis	19 studies identified 9 studies included	Effectiveness and cost effectiveness of multidisciplinary inpatient rehab by a geriatrician (hip fracture)	Usual care (orthopedic)	Older patients with hip fracture (inpatient)	"To examine the effects of co-ordinated multidisciplinary inpatient rehabilitation, compared with usual care, for older patients with hip fracture."	"The results were heterogeneous and not statistically significant."	Teams varied among the included studies.	All outside of U.S. (Australia, UK, Sweden, Finland, Canada, Spain)	General or teaching hospitals.	4 of the 9 included studies provided discharge planning. Unclear on any home visits.	Mortality, institutional care, LOS, cost data, functional outcomes, carer burden (2),	-Considerable heterogeneity in LOS. I-squared = 91.3 (greater than 70%).	Various (4 to 12 months).
Engelhardt 2006 (3861) (Note: SW given credit as a strength of the model)	RCT	160 Intervention: 80 Comparison: 80	Outpatient Geriatric evaluation and management (GEM)	Usual Primary Care	Male veterans, age 55 or older, who were above average users of outpatient clinical services.	"Examine the long-term impact of outpatient GEM on health care use and costs."	The "source of the reduced savings (of GEM over 48 months) was less use of hospital days of care."	Internist, Social Worker, nurse practitioner, and board certified geriatrician.	U.S. (Albany, NY Area?)	Veterans Affairs Medical Center (VAMC) outpatient clinical services.	Yes, initiated prior to, or on, hospital admission. No home visits indicated.	Health care utilization, costs, survival	ND in LOS (by time interaction) $p > .05$ (see findings pertaining to objective)	4 years
Enguidanos 2006	RCT	451 Intervention: 240 Comparison: 211	Informational assistance by mail, telephone care, GCM, or GCM with purchase of service capability	Compared against each of the 4 levels of interventions	Frail older patients (65 years of age or older)	To evaluate the effectiveness of 4 levels of care in a Geriatric Care Management model delivered in a managed care setting.	"All (4) groups had equal outcomes at 12 months for nearly all variables examined. Hence more costly levels of GCM do not measurably improve patient outcomes."	SW, nurses (educational levels differed depending upon level of care)	U.S. Los Angeles, CA (Kaiser Permanente service area)	Home	Telephone and in home care	Barriers of access to services, costs, satisfaction, QL, Compliance	ND No significant decrease in hospitalization or ER visits among the 4 levels of intervention.	12 months
Kopsroski 1997	RCT	311 Intervention: 156 Comparison: 155	Diabetes team	Usual Care	Hospitalized patients with diabetes (mean age 60 for Inv. and 65 for control)	Feasibility study of the effects of a diabetes team on LOS and re-hospitalization.	"Intervention by a diabetes team appears to reduce the LOS."	Nurse educator, endocrinologist and physician. (Nutrition, SW "requested by team based on individual need")	U.S. New York City	Community teaching hospital	No discharge plans stated and no home visits stated.	LOS, rates of re-admission.	ND No significant differences in mean LOS or median variance from expected LOS.	3 months
Long 1999	RCT	77 Intervention: 34 Comparison: 43	Patient advocacy case management model	Regular care	75 years and over with severe functional disability or excessive ER.	What is the "potential for case management to influence the use and cost of care in the last month of life[?]"	"Case-managed clients used more services and generated greater costs than the regular-care group."	Case Managers with geriatric experience (unspecified), Physician, physician advisor.	U.S, Ohio. Kaiser Permanente Medical Care Program	Home, managed care setting	No, n/a-	Service use, cost (in last month of life)	↑ Mean no. hospital days. CM 10.67 days vs RC 9 days ( $p = .534$ )	1 month
Naglie 2002	RCT	280 Intervention: 141 Comparison: 139	Post-op interdisciplinary care	Usual Care	Hip fracture patients at least 70 years of age.	Does inpatient interdisciplinary care improve the outcomes of elderly patients with hip fracture?	Post-op inpatient interdisciplinary care did not result in significantly better 3- or 6-month outcomes.	Internist-geriatrician, physiotherapist, occupational therapist, social worker, and nurse.	Canada, Toronto	Inpatient. University-affiliated acute care Hospital	Yes, discharge plan and home care if warranted.	Mortality, LOS	ND No differences in total days spent in hospitals, rehab, or nursing homes.	6 months

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Weir 1998	RCT	75 Intervention: 39 Comparison: 36	Quick response team (home care coordinator)	Usual services	ER patients , aged 20-94.	Compare the effects and expenditures between comparable clients served by QRP vs usual ER	"The findings indicate that it is not such a simple matter to divert care to the community."	Physician, nurse, homemaker, physiotherapy, occupational therapy, social work, nutrition, as needed at home.	Toronto, Ontario	2 community Hospital ER's and home.	Yes, in home if necessary.	Health status caregiver burden, costs	<b>ND</b> No differences in number of visits to ER or length of time in ER	10 days after ER care
Bouman 2008	RCT	330 Intervention 160 Comparison 170	Home visiting program, including a multidimensional geriatric assessment	Usual Care	Aged 70-84 years	To improve the functional abilities of older people and subsequently reduce the use of institutional care services.	The program did not appear to have any effect on the health care use and had a low chance of being cost-effective. These visits are probably not beneficial in the Netherlands or comparable settings in other Western countries.	Auxiliary community nurses	Netherlands	Home	Yes, telephone and in home visits	Admissions to hospital, nursing home, and home for older persons; contacts with medical specialists, general practitioners, and paramedics; and hours of home care help	<b>ND</b> There was no statistical difference between the two groups for hospital bed days at 18 months or 24 months.	24 months
Ekman 1998	RCT	1741 Intervention 79 Comparison 79	Outpatient Nurse-monitored, outpatient-care program	Usual Care	Elderly patients previously hospitalized with chronic heart failure	Evaluate the feasibility of a nurse-monitored, outpatient-care program for elderly patients previously hospitalized with CHF.	The program was not feasible for the majority of these patients with moderate-to-severe CHF mainly because of the small proportion of eligible patients and the high drop-out rate. Management of these patients would have to be more adjusted to their home situation	Registered nurse, nurse practitioner, or physician assistant	Sweden	Program located at the hospital	Patients went to outpatient instead of ER. Plan for goals. No home visits, but nurse contacted at home by phone.	Our findings indicate that only a minority (13-17%, 95% CI) of hospitalized, elderly patients with moderate-to-severe heart failure at admission may be candidates for an outpatient care program located at the hospital.	<b>ND</b> "The numbers of hospital days in the structured-care group...were similar to the corresponding numbers in the usual-care group." ( $p=.29$ )	6 months
Griffiths 2001	RCT	176 Intervention 89 Comparison 87	Transfer to a nursing-led inpatient unit for 'intermediate care'.	Usual Care	Medically stable but requiring further inpatient care, referred to the unit from acute wards.	The unit was designed to replace a period of care in acute hospital wards and promote recovery before discharge to the community.	The nursing-led inpatient unit led to longer hospital stays. Since length of stay is the main driver of costs, this model of care-at least as implemented here-may be more costly.	Speech therapist, Physical therapist, occupational therapist, recreation therapist MD, DO nurse, NP, or PA	London, England	Acute care hospital/medical center Nursing home/skilled nursing facility	Inpatient, intermediate care. No discharge plan mentioned or home visits.	"There was a large and significant difference in the length of stay with patients allocated to the (NLIU) staying a mean of 10.9 days longer than those in usual care."	<b>↑</b> LOS The extended stay associated with the unit suggests that it may substitute for a period of primary or community care, which increases inpatient costs.	ns

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Inglis 2006	RCT	297 Intervention 149 Comparison 148	Nurse-led, multidisciplinary, home-based intervention (HBI)	Usual patient management	Elderly cohort of patients with chronic heart failure initially discharged from short-term hospital	Study end-points were all-cause mortality, event-free survival, frequency and LOS, the healthcare utilization costs, and subsequent cost per life-year saved	In altering the natural history of CHF vs UC (via prolonged survival and reduced frequency of recurrent hospitalization), HBI is a remarkably cost- and time-effective strategy over the longer term."	Nurse and pharmacist, or cardiac nurse, nurse practitioner, or physician assistant	Adelaide, Australia	Acute care hospital/medical center	Yes. Home visit after 7-14 days discharge, phone over 6 months.	"The present unique study demonstrates the enduring benefits of HBI relative to UC on survival, hospital activity, and health care costs during the normal life span of 297 typically old and fragile patients with CHF."	↑ Overall, HBI patients accumulated more associated days of hospital stay  Long-term study results	7.5 to 10 year period
Newcomer 2004	RCT	3079 Intervention 1537 Comparison 1542	Complementary primary care program for geriatric patients (ECM)	Usual Care	Geriatric patients enrolled in PacifiCare's Secure Horizons Medicare plan	Will the program lead to "timelier and more comprehensive care, improvements in patient self-reported health and mental health status, and reduced preventable health care use?"	No statistically significant main effects were found, but persons with three or more independent ADL limitations were about half as likely to have a nursing home admission if they were in case management.	Registered nurse, nurse practitioner, or physician assistant	San Diego (?) US	Home	Preventative care no discharge or home visits, but care plan in place. Home assessment only if necessary. Phone predominant.	Both unadjusted and multivariate analysis found no statistically significant main effects associated with being in case management. This finding was consistent among each medical group separately or combined.	ND Hospital, all cases treatment vs control, Hospital mean monthly days	12 months
Rudy 1995	RCT	220 Intervention 145 Comparison 75	Low-technology environment of care and a nurse case management case delivery system	Traditional high-technology environment -intensive care unit (ICU)	Long-term chronically critically ill patients	Compare low-technology care and a nurse case management case delivery system (special care unit, SCU) with traditional high-technology environment (ICU) and primary nursing care delivery system	Results demonstrate that nurse case managers in a SCU setting can produce patient outcomes equal to or better than those in the traditional ICU care environment	Physician/MD, DO, Registered nurse, nurse practitioner, or physician assistant	US	Acute care hospital/medical center	No, unit comparison for Long stay ICU.	No differences between the groups including mortality and LOS indicate that chronically critically ill patients can be cared for outside the standard ICU setting when their care is managed by skilled nurse case managers.	ND While the mean LOS for the SCU patients was 2 days less than the ICU patients, this difference was not significant." (p=.655)	4 years
Shelton 2001	RCT	412 Intervention 210 Comparison 202	Medicare Alzheimer's Disease Demonstration and Evaluation (MADDE) program (at the Illinois site)	Usual Care	Medicare-eligible caregivers of persons with dementia	What are the effects of the (MADDE) program (at the Illinois site) on the healthcare utilization and Medicare expenditures by caregivers of persons with dementia	Results suggest that enhanced chronic illness case management directed at patients and their caregivers can reduce the need for acute hospital care.	Registered nurse, nurse practitioner, or physician assistant	Illinois US	Home	No discharge plans-Care plans for AD patients & caregivers. Monitored services.	The intervention recognized the primary caregiver of a person with AD as the team member with the most influence over healthcare practices and decisions and therefore as the focus of the intervention	ND For caregivers who were hospitalized, there were no significant differences in length of stay between the two groups.	ns

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<b>Stenvall 2007</b>	RCT	199 Intervention 102 Comparison 97	Multidisciplinary postoperative rehabilitative program	Conventional postoperative routines	70 years and older with femoral neck fracture	What are the short- and long-term effects of this program on living conditions, walking ability and activities of daily living performance on discharge postoperatively.	A multidisciplinary postoperative intervention program enhances ADL, living performance and mobility after hip fracture, from both a short-term and long-term perspective.	Physical therapist, occupational therapist, recreation therapist MD, DO, nurse, nurse practitioner, or physician assistant	Sweden	Acute care hospital/medical center (Educational institution)	Outpatient similar for 2 groups, Nurse and PT followed up in homes at 4 and 12 months.	Primary outcomes were: living conditions, walking ability and activities of daily living performance on discharge, 4 and 12 months postoperatively.	<b>ND</b> During the first postoperative year, the total mean in-hospital stay (including both the in-hospital stay in connection with the fracture and any in-hospital stays after discharge) was not significantly different between the intervention and control groups.	4 and 12 months
<b>Askim 2004</b>	RCT	62 Intervention 31 Comparison 31	Extended stroke unit service (ESUS)	Ordinary stroke service (OSUS)	Acute stroke patients living in rural municipalities	To evaluate the effect of an extended stroke unit service (extended service), with early supported discharge	An extended stroke unit service with early supported discharge seems to have no positive effect on functional outcome for patients	Physical therapist, occupational therapist, recreation therapist MD, DO, nurse, nurse practitioner, or physician assistant	Norway	Acute care hospital/medical center Nursing home/skilled nursing facility Own home	Yes, discharge plans and mobile stroke team organized follow-up care at home..	proportion of patients who were independent, LOS, and mortality	<b>ND</b> "There were no significant differences in length of stay"	
<b>Shannon 2006</b>	RCT	823 Intervention: 434 Comparison: 389	Telephone care-management	Usual care	High-risk Medicare health maintenance organization (HMO) health plan enrollees	Reduction of medical service utilization	Results suggest that a modest intervention linking older adults to HCBS may have important cost-saving implications for HMOs serving community-dwelling older adults with high healthcare service utilization	Social service provider-not interdisciplinary.	S California 2 social service organizations partnered w/ Medicare HMO.	Home	n/a, joined care advocate program, no discharge. Link to services via phone.	Reduce cost, Hospital and ER admissions, LOS	<b>↓</b> "There were no significant differences in patterns of changes for hospital days or ED visits between ITT and controls." (Increased use of hospital days, OR =0.39, <.05)	12 months

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Kalra 2000	RCT	457 Intervention/ 152 Comparison/ 305	Stroke unit	stroke team, or domiciliary stroke care	Patients, moderately severe stroke	The primary outcome measure was death or institutionalization at 12 months.	Mortality or institutionalization at 1 year were lower in patients on a stroke unit than for those receiving care from a stroke team or domiciliary care	Physical therapist, occupational therapist, recreation therapist MD, DO nurse, nurse practitioner, or physician assistant	UK	Acute care hospital/medical center, home	Support at home with nursing and social services for domiciliary stroke care. Discharge plans for Stroke unit, no mention of home care.	Death or institutionalization	LOS ND between SU mean 32 vs ST 29.5. Not reported for domiciliary stroke care	12 months