Evidence Table 14. Trials of Case Management for Other Clinical Conditions

| **Author Year(Quality)** | **Study Purposeand/or*A Priori* Hypothesis (if stated)** | **Eligibility Criteria** | **Exclusion Criteria** | **Study Design/Type****Duration of intervention** | **Demographics:Age (Mean, Median and Range)Gender (% Female)Race and/or ethnicity Socioeconomic Status** | **Primary Disease of Population****(and other medical comorbidities and/or coexisting mental illness)** | **Factors of Complex Care Needs** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Allen 20024(Poor) | To test effectiveness of nurse CM program to lower blood lipids in patients with CHD.  | Patients with hypercholesterolemia, defined as an LDL-C level >2.59 mmol/L (100 mg/dL) or a total cholesterol level >5.18 mmol/L (200 mg/dL), who underwentCABG or PCI. | Lived >75 miles from the hospital; had a severe, noncardiac life threateningillness; major psychiatric or substance abuse morbidity, or severe cardiac disease with a poor prognosis (NYHA Class IV or preoperative EF <30%); >75 years, BMI >40; participation in conflicting research study; unable to speak/understand English, physician caring for patient refused.  | Randomized trial, duration 1 year | Mean age: Intervention group 61.1, usual care 59.61) Gender: CM group (70% male/N=70, 30% female/N=34), Usual care (73% male/N=83, 27% female/N=30)2) Race: CM group (81% white/N=93, 19% other/N=22) Usual care (82% white/N=93, 18% other/N=20)3) Education: CM group 13.8+/-3.7 years, usual care 13.3 +/- 3.4 years | Adults with hypercholesterolemia and CHD who received CABG or PCI.1) MI (53%/N=61 CM 54.9%/N=62 usual care); HTN (positive history, or BP >140/90 mm HG)(74.8% CM, 77% usual care); prior revascularization (23.5% CM group, 31% usual care group); CHF (4.4% CM group, 5.3% usual care); Cerebrovascular disease (5.2% CM group, 6.2% usual care); Peripheral vascular disease (10.4% CM group, 14.2% usual care); DM (28.7% CM group, 23% usual care); BMI (28.7 CM group, 28.2 usual care)2) NR | Majority of population had multiple comorbidities and were considered "high-risk" CABG or PCI. No socioeconomic factors contributing to complex care described by authors. |
| Bourbeau 200312;Bourbeau 200613(Good) | A disease-specific self-management program and the ongoing attention and communication by a trained health professional could significantly reduce the number of hospital admissions for patients with advanced COPD.  | Stable COPD.> 50 years old.Current or previous smoker.  | Previous diagnosis of asthma.Participation in a respiratory rehabilitation program in the past year.Long-term-care facility stays. | Multicenter randomized trial1 year followup period. | Age, year usual care 69.6±7.4intervention 69.4±6.5Sexusual care 41% femaleintervention 48% female | COPD1) Comorbid conditionsCardiovascular: usual care 48%, intervention 43%Renal : usual care 4%, intervention 17%Endocrine: usual care 24%, intervention 19%Gastrointestinal: usual care 32%, intervention 26%2) NR | Old ageEducation <12th grade:usual care 77%intervention 82% |
| Chow 201019(Fair) | To examine the effectiveness of a nurse-led case management program in improving the quality of life of peritoneal dialysis patients in Hong Kong.  | Patients were included if: admitted to the renal units of the study hospitals, telephone access after discharge, receiving PD. | Patients were excluded if: received PD only intermittently, transitioned to HD during hospitalization, had an upcoming planned admission, new to PD within 3 months. | Randomized trial with pre and post testStudy duration: 12 weeks | Age mean: 56.9 +/- 13.5 yearsAge range: 23-78 years38.8% Female Race: NR1) 14.3% and 7% had no formal education in the comparator and intervention groups respectively2) 21.4% and 11.6% were unemployed in the comparator and intervention groups respectively3) 35.8% and 30.3% had financial status that was insufficient or extremely insufficient in the comparator and CM groups respectively. | ESRD Etiology unknown on 57.6%, DM in 24.7%, DM in 10.6%; mean years on PD: 2.6; range years on PD: 0.3-121) 41% had diabetes(38.1% and 44.2% in the comparator and intervention groups respectively); 32.9% had heart disease (28.6% and 37.2% in the comparator and intervention groups respectively)2) 1.2% had psychiatric disease (OF NOTE, 0% in comparator group and 2.3% in the intervention group) | 16.5% unemployed, 7% with "extremely insufficient" financial status; 10.6% with no formal education |
| Claiborne 200621(Poor) | Investigated efficacy of social work care coordination model for stroke patients; (evaluated cost via MD, ED, and inpatient reimbursements to "evaluate the ability of group membership (intervention orcomparator) to affect reimbursement." | Patients surviving stroke and completing and inpatient rehab program; 18 or older. | Severe cognitive impairment, language comprehension problems, or discharged to long term care facility | Trial, randomly assigned pre-post experimental design, 3 months prior data collection, 3 month intervention. (6 months)  | Age range: Intervention group: 70 Comparator Group: 65 11.99 ("averaged 65 to 70 years old"--mean age?);Gender (39% Female)Race and/or ethnicity (84% white) | Stroke (CVD)1) Patient's with moderate, intermediate and highcomplexity (details NR)2) Reports trauma and mental health issues  | Psychosocial assessment consists of five sections and a total score. A higher score indicates that the patient is experiencing greater stressors. The five sections are (a) family issues and support, with scores ranging from 9 - 45; (b) social issues ranging from 7 to 35; (c) trauma and mental health issues ranging from 6 to 30; (d) legal issues ranging from 2 to 10; and (e) chemical dependency issues ranging from 4 to 20. Total scoresrange from 28 to 140. |
| Fan 201229(Good) | To determine the efficacy of a comprehensive care management program in reducing the risk for COPD hospitalization. | Hospitalized for COPD in the 12 months before enrollment. Postbronchodilator ratio of FEV1 to FVC below 0.70 with an FEV1 below 80% predicted. >40 years old. Current or past history of cigarette smoking(>10 pack-years). At least 1 visit in the past year to a VA primary care or pulmonary clinic. No COPD exacerbation within 4 weeks. English speaking. Telephone access. | Primary diagnosis of asthma. Any medical condition that would impair ability to participate in the study. | Randomized trial, 1 year planned duration. Note: Due to serious safety concerns, the intervention was terminated before the trial’s planned completion. Mean followup was 250 days. | Mean Age: 66 years3% FemaleRace: 87% White84% > high school degree | COPD1) Comorbid conditions: Hypertension (61%), Ischemic heart disease (32%), diabetes (27%), CHF (17%).2) Depression self-reported (17%). | Severe COPD with high risk for hospitalization. |
| Ma 200955;Berra 200756;Ma 200657(Good) | To evaluate a nurse- and dietitian-led CM program for reducing major CVD risk factors in low-income, primarily ethnic minority patients in a county health care system, 63.0% of whom had T2DM. | Men and women aged 35 to 85 years who had moderately to severelyelevated levels of major modifiable CVD risk factors with or without a history of atherosclerotic CVD or DM. | No elevated CVD risk, leaving area, difficulty coming to visitsEnrolled in another studyAge < 35 or > 85 yearsSerious comorbidities, family member already enrolled, language. | 2-arm randomized trial | Mean age (55.1 overall, 54.4 CM group, 55.8 usual care)Female (65.6% overall, 64.6% CM group, 66.7% usual care)Hispanic (63% overall, 63.2% CM group, 62.8% usual care)African American (9.6% overall, 9.9% CM group, 9.2% usual care)Asian (11.9% overall, 11.3% CM group, 12.6% usual care)Education less than 8th grade (44.9% overall, 50.7% CM group, 39% usual care); Unemployed, disabled, retired (60.5% overall, 63.2% CM group, 57.7% usual care); Unable to speak, read or understand English (49.1% overall, 50.5% CM group, 48.1% usual care). | Patients at elevated risk for cardiovascular disease.1) Hyperlipidemia/ hypercholesterolemia (Overall 63%, CM group 64.2%, usual care 61.8%); Metabolic Syndrome (overall 59.2%, CM group 59.0%, 59.4% usual care); Elevated BMI (overall men 33, women 35.4, men in CM 33.1, men in usual care 32.9, women in CM group 35.2, women in usual care 35.5)2) NR | Sizable low income population, most of whom have Medicaid or a county sponsored indigent care plan. |
| Mayo 200862(Good) | Determine whether persons newly discharged into the community following an acute stroke would report better health related quality of life (HRQL) and have fewer emergency room visits and non-elective hospitalisations if assigned to a stroke case manager who would interact with the patients personal physician to coordinate and provide continuity of care in comparsion to those receiving usual procedures for post-hospital care | Returning home directly from the acute-care hospital following a first or recurrent stroke with any of the following criteria indicating a specific need for health care supervision post-discharge; lives alone; mobility problem requiring assistive device, physical assistance or supervision; mild cognitive deficit, dysphagia; incontinence; social service consultation during acute hospitalisation; or need for post-discharge medical management for diabetes, congestive hear failure, ischemic heart disease, arthritis, COPD, atrial fibrillation, kidney disease, perihperal vascular disease | Discharged to an in-patient rehabiitation facility or to long-term care | Randomised trial, 6 week intervention with 6 month followup | Interventionmean age: 7033% femaleComparatormeage age: 7245% female | Stroke patients | Hypertension; ischemic heart disease; dabetes; atrial fibrillation; cardiovascular condition; lives alone; no primary care physician |
| Rice 201086;Dewan 201187(Good) | Determine if a simpler disease management program, with a focus on early recognition and self-treatment of COPD exacerbations, would improve outcomes in patients with severe COPD.  | Spirometrically confirmed COPD at high risk for hospitalization as predicted by one or more of the following during the previous year: hospital admission or ED visit for COPD, chronic home oxygen use, or systemic corticosteroids for COPD. | Spirometry | Randomized trial, 1 year | disease management vs. usual careAge (SD):69.1 (9.4) vs. 70.7 (9.7)Gender % female:2.4% vs. 1.6% | COPD, current smoker, hypertension, cardiac, gastrointestinal, musculoskeletal, endocrine, genitourinary, neurologic. | Number of comorbidities |
| Sadowski 200994(Good) | To assess the effectiveness of a case management and housing program in reducing use of urgent medical services among homeless adults with chronic medicalillnesses. | Patients > 18 years without stable housing 30 days prior to hospitalization, referred at least 24hours before hospital discharge and not the guardian of minor children needing housing. Also had >1chronic medical illnesses confirmed in medical record: HTN or diabetes requiring medication; thromboembolic disease; renal failure or cirrhosis; CHF, MI atrial or ventricular arrhythmias; seizures in past year or needed medication for comparator; asthma or emphysema with > 1 ED visit or hospitalization in past 3 years; cancer; HIV; GI bleeding (not peptic ulcer disease) or chronic pancreatitis | Hospital physician determined them incapable of self-care on hospital discharge. | Randomized trial | Mean Age: 47 years22% Female 95% did not graduate from high school | >1 Chronic medical illness (see eligibility criteria cell)1) Unclear2) 43% with major depression; 17% with panic disorder | Median duration of homelessness= 30 months55% without medical insurance  |

| **Author Year(Quality)** | **Payer/Insurance Carrier** | **Managed Care (Yes/No)** | **Characteristics of the Case Manager** | **Case Management Intervention** | **Preintervention Training** | **Primary Location of Case Manager** | **Primary Mode of Case Manager Contact with Patient** | **Caseload**  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Allen 20024(Poor) | NR. States that some patients received insurance coverage for prescriptions and others paid out of pocket. | NR | NP | NP and PCP and/or cardiologist participated in a partnership to manage patient's lipids. NP provided 1 outpatient visit 4 to 6 weeks after discharge to initiate a plan for lipid management. Plan included counseling for lifestyle modifications and prescription or adjustment of appropriate lipid lowering medications. Followup telephone calls to the patient reinforced counseling and recommended appropriate adjustments in medications based on results of blood tests.  | NR | Primary care clinic | 1 outpatient visit 4 to 6 weeks after discharge to initiate management plan. Followup telephone calls to reinforce counseling and recommend medication adjustments. | NR |
| Bourbeau 200312;Bourbeau 200613(Good) | Provincial universal health care program | No | Experienced nurse or respiratory therapist.  | Standardized education on the COPD self-management program as well as ongoing supervision by a case manager, in addition to management by usual specialist and/or family physician. | Specific training was provided for the application of the program. Case managers had to become familiar with the content of the COPD self-management program and competent to educate patients in regards to all aspects of the disease. CMs had first to identify their specific learning needs in regards to COPD and patient education through a questionnaire and a group discussion. Half-day training sessions were dedicated to interactive lecturing session on each aspect of COPD given by different members of the multidisciplinary team. The rest of the training days included workshops oriented toward how to assess patient needs and the acquisition of motivational and teaching skills using group discussion, demonstration and practice of techniques, case scenarios, and role modeling. CMs were handed a reference guide to assist in educating their patients that includes general and specific objectives, material resources needed, types of educative interventions, and patient outcomes expected for the different elements taught in the program.  | Health Centers | Initially in health center, followup by phone calls. | NR |
| Chow 201019(Fair) | Non-US | Non-US | All care managers are referred to as "nurses" (no specific educational background info provided) | 1) Discharge planning2) Weekly nurse phone followup after discharge for 6 weeksdischarge planning included: discussion with patient and family and OMAHA evaluation of patient’s physical, social, cognitive, emotional status, individualized education program, development of shared objectives. | 24 hours training required for each NCM. All required to complete training with a simulated patient. | Not explicitly stated, but probably a call center. | Telephone | NR |
| Claiborne 200621(Poor) | Medicare, Medicaid  | Yes, organizations not named. | Care coordinators were master’s-level social workers | A social worker made an initial home visit within 1 to 2 weeks after the patient was discharged from an inpatient stroke program at a physical rehabilitation hospital. Depending on patient need, subsequent contacts with the patient were made via telephone or home visits. Most patients received onehome visit and weekly telephone appointments ranging from 20 minutes to 1 hour. Home visits were rare after the initial visit. A few patients received two home visits. One patient with aphasia required weekly home visits. | NR | Physical rehabilitation hospital | 1 home visit; weekly telephone appointments | NR |
| Fan 201229(Good) | VA coverage | Yes | Respiratory therapist (8 sites); RN (5 sites); Physician assistant (2 sites); MD (2 sites); Certified medical assistant (1 site); NP (1 site); Study coordinator (1 site) | COPD education during four individual sessions and one group session, an action plan for identification and treatment of exacerbations, and scheduled telephone calls for case management. | Three-day training course with workshops covering detailed aspects of the self-management program. | Outpatient clinic | Initially in-person (CM taught the educational sessions), subsequently by phone (scheduled CM calls).  | 20 sites/ 1 CM at each site: caseloads ranged from 2 to 32. |
| Ma 200955;Berra 200756;Ma 200657(Good) | Most Medicaid or a county sponsored indigent care plan. | No | Nurse and dietitian. | CM participants received a 1:1 nurse- and dietitian-led CM intervention Heart to Heart program that differed by focusing on high-risk patients served by public health primary care clinics. Principal CM strategies included (1) intensive,individualized care; (2) continuity of care and coordination with primary and specialty care; (3) self-management support; (4) implementation of evidence-based treatment guidelines for primary and secondary CVD prevention15,16; and (5) behavioral counseling to improve physical activity, nutrition, weight management, stress reduction, and medication adherence. | Nurse and dietitian CM were trained and supervised by a senior nurse practitioner and the principal investigator.  | Clinic | Face-to-face clinic visits supplemented by telephone consultations, as needed | NR |
| Mayo 200862(Good) | NR | No | Two nurses with extensive experience with geriatric nursing, including stroke | Establish contact with patients existing personal physican and arrange for an appointment and for documentation about the stroke to be fowarded to the physician. For persons without personal physicians, the local community health centre (CLSC) was contacted for physician follow-up. Stroke patient were also provided with a 24-hour contact number for the nurse, which was used sparingly mostly on weekends on in the early evening mostly propted by visits from family members | Establishing guidelines for assessments to be carried out and creating a documentation system for recording the interaction | NR | In home visits, telephone | NR |
| Rice 201086;Dewan 201187(Good) | NR | NR | NR, disease management | Patients attended single 1 to 1.5 hour group education session conducted by a respiratory therapist case manager. Session included general information about COPD, direct observation of inhaler techniques, review and adjustment of outpatient COPD medications, smoking cessation counseling, recommendation concerning influenza and pneumococcal vaccinations, encouragement of regular exercise, and instruction in hand hygiene. | NR | NR | Mail, telephone | NR |
| Sadowski 200994(Good) | Of the 55% insured, 37% Medicaid, 8% Medicare | No | Case managers social worker with master’s-level training. | Case management was one of three integrated components of intervention (after hospital discharge transitional housing at respite care centers, placement in stable housing, and case management). Functions of CM included: hospital CM facilitated discharge planning during hospitalizations and placement in respite care or back in stable housing sites; respite and housing CM facilitated the participant’s housing placement and coordinated appropriate medical care with substance abuse and mental health treatment referrals as needed. On-site CM had contact with participant at least biweekly. | Intervention designed by developed by a consortium of 14 hospitals, respite care centers, and housing agencies in Chicago. Note: no description of duration. | Hospital, respite location and study sites.  | Appointments and followup phone calls | No more than 20 subjects per case manager |

| **Author Year(Quality)** | **Frequency of Visits and Phone Calls** | **Location of Face: Face Time** | **Planning and Assessment** | **Patient Education** | **Self-Management Support** | **Coordination of Services** | **Medical Monitoring; Adjustment**  | **Integrated within Primary Care** | **Health IT** |
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| Allen 20024(Poor) | NR. 1 outpatient visit 4-6 weeks after discharge to initiate plan. Average of 7 contacts per patient over 1 year. | Single outpatient baseline followup visit for 1 hour in clinic. | Nurse practitioner and primary provider and/or cardiologist participated in a partnership for managing the patient's lipids. 1 outpatient visit 4 to 6 weeks after discharge to initiate lipid management plan that included counseling for lifestyle modifications and prescription or adjustment of appropriate lipid lowering medications. Followup telephone calls to the patient reinforced counseling and recommended appropriate adjustments in medications on the basis of the results of followup blood tests. | All patients received standard discharge teaching and physical therapy instructions administered by the hospital. Instructions included general guidelines for activity, monitoring pulse, temperature, and diet, and personalized exercise instructions for the first few weeks after discharge. | Followup telephone calls to the patient reinforced counseling. | Standard discharge care for all patients | Repeat measures of plasma lipids and liver function tests at 6 weeks after initiation or dosage adjustment; When the serum concentration of LDL cholesterol was >2.20 mmol/L (85 mg/dL), the nurse practitioner initiated or adjusted drug therapy with the use of lipid management algorithms. | Care plans, results of lipid testing, and adjustments of medications communicated to the primary provider and/or cardiologist regularly by letter. | NR |
| Bourbeau 200312;Bourbeau 200613(Good) | Weekly for first 8 weeks, monthly afterwards | Hospital | Weekly skill-oriented teaching at home for 6-7 weeks, depending If the patient needed home oxygen and agreed to perform the home exercise program. Monthly followup phone calls after each session.Audiotape given to every patient to be used at home in order to assist him/her in implementation of relaxation techniques; deep breathing, progressive muscular relaxation, and visualization.  | 1 hour a week for 7 to 8 weeks, taught at home. | 7 skill-oriented patient workbooks covering 1) basic information about COPD; breathing and coughing techniques, energy conservation during day-to-day activities, and relaxation exercises; 2) preventing and controlling symptoms through inhalation techniques; 3) understanding and using a plan of action for acute exacerbation; 4) adopting a healthy lifestyle (smoking cessation, nutrition, sleep habits, sexuality, managing emotion); 5) leisure activities and traveling; 6) simple home exercise program, not supervised, except for an initiation visit; and 7) long-term oxygen therapy when appropriate.  | No  | Medication was monitored but not adjusted. | Yes, intervention was in addition to management by usual family physician. | No |
| Chow 201019(Fair) | 1) Weekly phone followup for 6 weeks starting 72 hours post discharge2) Face to face interviews at discharge, 6 weeks post discharge, and 12 weeks post discharge. | 3 interviews; time utilized for each interview not specified.Location: unclear (presumably a clinic) | Planning: as stated, included discharge planning (outlined previously); during followup calls, the nurse checked and reinforced patient's progress towards meeting shared objectives and identified new or potential complications including any problems encountered on returning home.  | Individualized education plan developed for each patient by nurse care manager at time of discharge. | Patient goal-setting, as described | During followup calls, additional services could be utilized if felt necessary by nurse care manager. Those additional services included: community nurse home visit, referral to renal nurse clinics or wards, referral to renal doctor's clinic, medical treatment, referral to ED for emergent treatment | NR; Unclear. Nurse had ability to refer patient to renal nurse evaluation or MD evaluation or ED. Nurse also had an option for "medical treatment" but that is not described. | Not reported. NCM did have ability to refer patient to nephrologist office or ED - but primary care not explicitly stated.  | NR |
| Claiborne 200621(Poor) | Most patients received one home visit and weekly telephone appointments; telephone appointments ranging from 20 minutes to 1 hour.  | Face time: 1 in home visit at patients home; Home visits were rare after the initial visit. A few patients received two home visits. One patient with aphasia required weekly home visits. | Intervention group followup data were collected by the social worker during the last care coordination appointment at the end of 3 months. | NR | NR  | Provided service needs assessment, service coordination, assisting, and advocating for services (e.g., new medical appointments, additional care, transportation issues, financial issues, housing, heating and repair assistance). | "Monitoring patient careand progress" No, did not adjust medications. | Possibly; "providing brief patient/ caregiver counseling." | No |
| Fan 201229(Good) | Four individual educational sessions plus a group session at start of study. Phone call to patient once per month for 3 months then every three months thereafter. | Hospital-based outpatient clinics | Initial needs assessment by CM; written, individualizedaction plan for flare-ups that included prescriptions forprednisone and an antibiotic (chosen in consultation withthe primary care physician) | Four individual 90-minute weekly sessions plus a group session | Followup telephone calls to the patient reinforced self-management teaching; Pts instructed to call CMs after initiating action plan; CMs available by phone during regular working hours. | CMs contacted PCP if an exacerbation occurred. | CMs contacted PCP if an exacerbation occurred. | Yes. PCPs for patients in both groups were advised to manage their patientsaccording to published guidelines | NR |
| Ma 200955;Berra 200756;Ma, 200657(Good) | After initial visit, 4 to 6 week intervals during the initial 6 months and every 2 to 3 months thereafter with per-patient target of 8 to 10 visits during 15 months. | Clinic visits | Each visit began with a brief physical examination and a review of the patients risk reduction plan, progress, and problems. Counseling was then provided and referrals made as needed. | NR | NR  | Yes, as needed | NR | Yes.  | No |
| Mayo 200862(Good) | Average of 4.8 home visits and 7.8 telephone contacts | In home | NR | NR | NR | Case managers worked with personal primary care physicians or local community health centres for those without personal primary care physicians | NR | Yes, case managers worked with primary care physicians | NR |
| Rice 201086;Dewan 201187(Good) | Monthly phone calls | Clinic | NR | Disease management and education sessions as part of intervention. | Each received an individualized written action plan that included refillable prescriptions for prednisone and an oral antibiotic, contact information for a case manager, and the telephone number of the 24-hour VA helpline.  | NR | NR | NR | NR |
| Sadowski 200994(Good) | At least bi-weekly. | NR | Yes, assessed medical, mental health and substance abuse needs.  | No | No | Yes, housing services | No; No | No | No |

| **Author Year(Quality)** | **Others** | **Comparator** | **Results by Patient Health Outcomes** | **Results by Resource Utilization Outcomes** | **Results by Process Measure Outcomes**  | **Harms Reported** | **Number Screened/Eligible/ Enrolled** | **Number Withdrawn/Lost to Followup/Analyzed**  | **Total Withdrawals; Withdrawals due to Adverse Events** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Allen 20024(Poor) | None | Patients in usual care group observed by usual primary providers and/or cardiologists. Enhanced usual care included written results of full lipid profiles sent to patients and their physicians at 4 weeks, 6 and 12 months post-discharge; received recommendations about goal levels for lipoproteins and generalrecommendations for diet and physical activity at baseline and again at the time of followup examinations.Note:All patients received standard discharge teaching and physical therapy instructions by the hospital and include: general guidelines for activity, monitoring pulse, temperature, and diet, and personalized exercise instructions for the first few weeks after discharge. | After 1 year of CM the average TC, LDL cholesterol, and triglyceride levels were significantly lower in intervention group. 1) Mean HDL level increased modestly in both groups. Significantly more patients in CM group than usual care group achieved LDL levels <2.59 mmol/L (65% vs. 35%, p=0.0001).2) No significant difference in proportion of patients achieving these goals at baseline. At 1 year, 87% of patients in intervention group and 79% of patients in usual care group were on lipid-lowering drugs. 97% in both groups were taking a single statin.3) NS changes in BMI in either group. | NR | Compared with usual care group, patients in CM group reported a greater reduction in dietary consumption of calories from total fat (p=0.0004), saturated fat (p=0.0004), and cholesterol (p=0.02) and increase in dietary fiber (p=0.13). Significantly higher proportion of patients in the intervention group (40%) reported exercising at a level of 6 MET hours per week compared with patients in the usual care group (26%, p=0.02). | NR | Of the 337 patients eligible, 228 (68%) consented/115 randomized to intervention group and 113 to usual care group. 158 (69%) completed 12 month followup (77% of intervention patients and 62% of usual care patients). | Loss to followup: inconvenience or loss of interest (58); changed providers (4); unable to contact (3); death (3); moved (2). | NR |
| Bourbeau 200312;Bourbeau 200613(Good) | NA | Usual care: management by usual specialist/family physician. | Usual care group, mean±SD FEV₁ was 0.98±0.31 L at baseline and 1.01±0.36 L at 12 months.Intervention group FEV₁ was 1.0±0.33 L at baseline and 0.96±0.32 L at 12 months. Lung function did not change significantly from baseline to the end of the study.Walking distance on the 6-minute walking test did not change significantly within or between groups at 4 and 12 months.362 acute exacerbations of COPD were reported in the usual care group and 299 in the intervention group (p=0.06). | Usual care group, 32.5% of acute exacerbations resulted in hospital admission compared with 23% in intervention group. Usual care group 44.4% of acute exacerbation resulted in an emergency department visit compared with 31.7% in the intervention group. Admissions during 1 year followup:acute exacerbations; usual care 118, intervention 71other health problems; usual care 49, intervention 21 | NR | NR | NR/469/191  | 25/1/165 | NR |
| Chow 201019(Fair) | None | Usual care included routine discharge care: standard information, telephone hotline service, self-help materials. | 1) No significant difference between comparator and study group overall for all quality of life measures. 2) Statistically significant (p<0.05) interaction effects were noted for sleep, staff encouragement, patient satisfaction, and social function. 3) By three time intervals, participants in the intervention group showed greater improvement in their scores during the first 6 weeks after intervention. Participants in the comparator group displayed slight improvement during first 12 weeks, but to a lesser degree than in intervention group.  | NA | NA | NR | Number screened: NR/Number eligible: 120/ Number enrolled: 100 | Lost to followup: 9 (4 in intervention group and 5 in comparator group).Withdrawn, unclear. A total of 6 were listed as having "discontinued intervention" due to death, transplant, or change of treatment regimen (3 in each group). Analyzed: 85 (43 in intervention group and 42 in comparator group). Note: 45 in each group required to meet sample size calculations. | Total withdrawals unclear (see previous). Adverse events NR. |
| Claiborne 200621(Poor) | None | "Both groups received subsequenttreatment as determined by physicians and patients." However, the intervention patients received additional social work care coordination services that the comparator group did not. | NR | "Outpatient reimbursement higher for Intervention group (p<0.05), ED reimbursement lower for intervention group( p<0.05); Total reimbursement lower for intervention group (p<0.05)" | NR | NR | 28 patients participated; 16 were assigned tothe intervention group and 12 were assigned to the comparator | Report 28 analyzed. Four comparator-group patients were removed from the study due to 2 dying, 1 entering a skilled nursing facility aftera rehospitalization event, and 1 left the study; One patient from the intervention group voluntarily left the study  | Unclear; one patient from the CM group left the study. |
| Fan 201229(Good) | NR | Usual care. Both the intervention and usual care groups received a COPD informational booklet and PCPs for both groups received a copy of COPD guidelines and were advised to manage their patients according to these guidelines. | No significant difference between intervention and control groups in number of COPD exacerbations, rate of antibiotic use, or the timing of prednisone or antibiotic treatment. Treatment.Exacerbations treated with prednisone: 2.5 per patient-year in the intervention group vs. 2.1 in the usual care group (rate ratio, 1.25 [CI, 1.05 to 1.48]; p=0.011). Deaths from all causes: intervention 28, usual care 10(hazard ratio, 3.00 [CI, 1.46 to 6.17]; p=0.003).Deaths due to COPD:intervention group 10, usual care 3 (hazard ratio, 3.60 [CI, 0.99 to13.08]; p=0.053). | 1-year cumulative incidence of COPD-relatedhospitalization: intervention 27%, usual care 24% (HR, 1.13 [95% CI, 0.70to 1.80]; p=0.62). | No statistically significant improvements in COPD-specific or general health status, depressive symptoms, COPD-related knowledge, or patient satisfaction.Patient self-efficacy: a statistically significant improvement in the intervention group at 1 year(mean difference of 1-year change in self-efficacy score,0.65 [SD, 2.3] [CI, 0.02 to 1.29]; p=0.044). | Excess mortality (see health outcome results). Due to serious safety concerns, the intervention was terminated before the trial’s planned completion. | Screened: 467; Eligible: 426; Enrolled: 426 | Lost to followup: 0;Analyzed: 426 | Withdrawals: usual care (10), intervention (8); Withdrawals due adverse events: (0)  |
| Ma 200955;Berra 200756;Ma 200657(Good) | None | Routine medical care with their primary care physician | Compared with baseline, mean FRS decreased in the CM group (-0.92; 95% CI, -1.28 to -0.57), whereas it remained unchanged in the UC group (-0.19; -0.56 to 0.18). Among patients randomly assigned to receive CM, the amount of change in the FRS was inversely associated with the number of face-to-face visits (r -0.22; p=0.001). The mean (SD) number of CM visits was 8.0 (5.3), equivalent to 11.2 (6.8) hours of face-to-face contact time.  | NR | NA | NR | 1005/419 | 78 lost to followup | 5 died |
| Mayo 200862(Good) | None | Usual care: patient and family were instructed to make an appointment with the patients personal physician or, if the pation did not have a physician, at their local community health centre as soon as possible. | Intervention vs. comparator: physical component summary at followup 43 vs. 40; mental component summary at followup 51 vs. 48 | Intervention vs. comparator: hospital readmission, unplanned 10% vs. 13%; scheduled 5% vs. 11%; emergency without hospitilisation at least on day 16% vs. 23%; general practioner outpatient visit average 1.8 vs. 2.1; specialist outpatient visit average 2.2 vs. 3.4 | NR | NR | NR/NR/294/190 | NR/NR/190 | NR |
| Rice 201086;Dewan 201187(Good) | NR | Usual care, received one-page handout containing summary of principles of COPD care and the telephone number for 24-hour VA nursing helpline. | 36 deaths in the disease management group vs. 48 deaths in the usual care group over the 1 year study period.  | Disease management vs. usual careMean cumulative number of COPD-related hospital admissions and ED visits in 1 year:0.48 vs. 0.82, p=0.001Disease management group spent average of 36% less time in the hospital for all causes. | Respiratory health status worsened, disease management vs. usual care average: 1.3 vs. 6.4, p<0.001 | NR | 761/743 | 84 deaths | NR |
| Sadowski 200994(Good) | Intervention case managers had weekly team meetings to coordinate the housing, social service, andmedical care needs of participants. | Participants in usual care group referred back to the original hospital social worker and received the usual discharge planning services with no continued relationship after hospital discharge. Typically patients provided with transportation to an overnight shelter if no other accommodation could be arranged before discharge. Participants with HIV had access to case management after hospital discharge through a Ryan White program while those without HIV had access to general case management services.  | NA | Rate Reduction in intervention vs. usual care: (95% CI)Hospitalizations 29 (10 to 44) p=0.005Hospital days 29 (8 to 45) .01Emergency department visits24 (3 to 40) For every 100 homeless adults offered the intervention, the expected benefits over the next year include: 1) 49 (95% CI, −20 to 119) fewer hospitalizations; 2) 270 (95% CI, −23 to 563), fewer hospital days; 3) 116 (95% CI, −3 to 235) fewer emergency department visits. | NA | Death (no other harms reported) | 604/455/407 | 76/61/405 | 76/0 |

Abbreviations: BP=blood pressure, BMI=body mass index, CABG=coronary artery bypass grafting, CHD=coronary heart disease, CM=case management, COPD=chronic obstructive pulmonary disorder, CVD=cardiovascular disease, HD=heart disease, HTN=hypertension, NA=not applicable, NP=nurse practitioner, NR=not reported, NYHA=New York Heart Association, PCI= percutaneous coronary intervention, PD=pulmonary disorder.