Evidence Table 15. Observational Studies of Case Management for Other Clinical Conditions

| **Author Year** | **Population** | **Categorization of Exposure** | **How Subjects were Referred to Case Management** | **Demographics (age, gender, race)** | **Study Design/Type** | **Adjusted Variables, Selection of Controls (for case-control studies)** |
| --- | --- | --- | --- | --- | --- | --- |
| Jowers 2000131  (Fair) | Patients at least 18 years old with severe asthma that were unstable or in need of intensive specialist observation and evaluation. | Following screening, development of individual treatment plans and asthma education, nurse CMs used telephone interaction and a pre-specified individual treatment plan to guide patients in health related decisions. Over the course of two years, CMs made 8 to 12 proactive calls to patients. CMs were also available to patients via telephone; patients averaged 6 calls to CMs. | NR | ≥18 years old. Other NR. | Prospective cohort lasting 2 years | NR |
| Okin 2000142  (Poor) | 5+ visits to the San Francisco General Hospital ED during the previous 12 months; age ≥ 18 years; ability to give informed consent; willingness to receive case management services | Provide and coordinate all needed services including: crisis intervention, individual and group supportive therapy, arrangement of stable housing and financial entitlements, linkages to primary care providers, harm reduction services and referral to substance abuse treatment, liaison with other community agencies and extensive, persistent outreach. 12 months | Referred by San Francisco General Hospital Emergency Department staff and screened for study admission by clinical case managers. | Age: 45(14.4), Range 19-82 years Gender: 13% female Race: 49% Black; 23% White; 19% Hispanic; 6% Native American; 4% Asian Unemployed: 100% | Pre-post design, 12 months between the start of the study and the post-test. Pre-test measures were obtained through self-report of behaviors 12 months prior to the start of the study. | NR |
| Poole 2001159  (Poor) | Sixteen patients receiving intervention (case management) vs. sixteen patients receiving usual care for COPD. | Case-management by a clinical-nurse specialist | All patients who had been admitted to Auckland Hospital for COPD four or more times in the previous two years, where two or more of these admissions had been in the previous 12 months, were considered for case management | Case-managed group: 63% male, mean age: 70 years race: NR vs. comparator group: 56% male, mean age 75.4 years, race: NR | Cohort. Not randomized | NR |
| Shah 2011150  (Fair) | Patients aged 18 to 64 years, below 200% of the Federal Poverty Level, uninsured, not eligible for public insurance programs, and frequent users of hospital services.  n=98 Intervention  n=160 Comparator | Case management included goal creation and support, assistance with care navigation, arranging support services, care transitions, and communication with providers. Care managers met with patients at least monthly. | Patients were referred to CM when they were identified as frequently utilizing ED and inpatient admissions. Frequent use defined as: 4 or more ED visits or admissions, 3 or more admissions, or 2 or more admissions and 1 ED visit within 1 year. | Mean age: 46.4 (Intervention), 46.0 (Comparator) Sex: 59.2% male (Intervention), 46.9% male (Comparator) Race: 46.9% Caucasian, 37.8% Hispanic, 12.2% Black, 3.1% Asian/Pacific Islander (Intervention); 50% Caucasian, 38.8% Hispanic, 11.3% Black (Comparator) | Cohort | NR |
| Tatum 2008152  (Poor) | Low income patients with epilepsy | Receiving 1 year of CM services from 2002 to 2003 | Patients were referred by their neurologist or through self-referral, usually based upon financial inability to obtain a primary physician or neurologist for care of their seizures; | Age: Mean 41 years, Range 3 - 67 years (13 pts were under 18 years, 2 pts were older than 65 years); Male 58%; Race NR; Married 14%; 67% without health care coverage; Medicaid/Medicare 20%; 68% reported transportation problems; 86% being treated with at least one antiepileptic drug; | Pre/post survey | NR |
| Wetta-Hall 2007153  (Poor) | Low income, uninsured patients with at least three ED visits in a six month period | Community Case Management model paired four sets of registered nurses and social workers to help uninsured patients access community resources, navigate the health care system, and find permanent physicians or clinics for medical care. | Patients of four area hospitals were given the option to contact Community Case Management team. | Mean age: 35 years Gender: 70% female Race: 67% Caucasian | Pre-post intervention design | NR |

| **Author, Year** | **Incidence (if cohort study)** | **List Patient Health Outcomes** | **Results by Patient Health Outcomes** | **Results by Resource Utilization Outcomes** | **Results by Process Measure Outcomes** | **Effects of Confounders, Intensity of Case Management, Duration** | **Notes** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Jowers 2000131  (Fair) | NR | NA | NA | At 12 and 24 months, major reductions in (p values for 12 and 24 months):  1) Unscheduled doctor visits (p<0.001; p<0.001) 2) ED visits (p<0.001; p<0.001) 3) Hospital visits (p=0.005; p<0.001) 4) ICU admissions (p=0.004; p=0.359) 5) Oral steroid bursts (p<0.001; p<0.001) 6) Days missed from work (p=0.010; p=0.112) | Estimated net savings due to reduced utilization and employee absenteeism at 12 months of CM: $280,369 | NR | Values reported graphically; no actual numbers reported. |
| Okin 2000142  (Poor) | NR | NR | NR | Pre vs. post intervention ED visits 15 vs. 9 p<0.01 Medical inpatient admissions  1 vs. 1 p=0.99 medical inpatient days 5 vs. 2 p=0.95 medical outpatient visits  2 vs. 4  p<0.01 | Median total hospital service cost decreased from $21,022 to $14,910, p=0.06. Median medical emergency service costs decreased from $4,124 to $2,195, p<0.01 Median medical inpatient costs decreased from $8,330 to $2,786, p<0.01 | NR |  |
| Poole 2001159  (Poor) | NR | number of hospital admissions; death; mean chronic disease questionnaire scores | One death in the case-managed group (died suddenly at home during sleep) and three deaths in the comparator group (all respiratory failure or pneumonia from COPD) | Median length of stay fell from 5.6 days to 3.5 days for the case-managed group but did not change in the comparator group. | Chronic disease questionnaire scores after 6 months demonstrated an average improvement of 20 points (p=0.03) | Duration of follow up was one year. The intervention group received education about the COPD disease process, the correct us of their medicines, smoking cessation, and how to recognize and manage exacerbations. They were encouraged to obtain a yearly influenza vaccination and to see their GP both on a regular basis and when they were unwell. Eight patients received a supply of prednisone and antibiotics to commence at home if they had an exacerbation. The clinical nurse specialist kept in contact with patients with weekly telephone calls and by visiting the patients at home each month (or more as needed). When a patient was admitted to the hospital, the medical staff notified the clinical nurse specialist, who saw the patient daily and helped in discharge planning. In the period immediately after discharge, the patients were visited more frequently at home. | In the period immediately after discharge, the patients were visited more frequently at home. One patient had administration of his medicine supervised by the clinical nurse specialist. Five patients were assessed by a liaison psychiatrist because the clinical picture and Hospital Anxiety and Depression score suggested a significant anxiety disorder. |
| Shah 2011150  (Fair) | NR | NR | NR | **Median ED visits per year** 6.0 (IQR 1-11) pre-enrollment vs. 1.7 (IQR 0-5) post-enrollment (p<00001)  **Median inpatient hospital admissions** 0 (IQR 0-1) pre-enrollment vs. 0 (IQR 0-0) post-enrollment (p<0.0001)  **Relate risk of ED visits, intervention vs. comparator** 0.68 (p<0.0001) | NR | NR |  |
| Tatum 2008152  (Poor) | 737 epilepsy pts received CM from this epilepsy service subserving a four-county region in southeastern Florida, during 2002-2003; | *measured at 1 year after CM intervention and compared to initial survey data (pre-intervention)*: seizure control; QOL measures; | **Seizure contro**l: 87% vs. 47% (p<0.0001);  **QOL**: Most pts (81%) self-assessed an improved QOL. Fewer pts reported difficulty with friends, employers, problems socializing, and feelings of anger (p<0.05). | ED Admissions | Number of pts with ED visits: 95% vs. 5% p<0.0001; ED admissions per patient dropped from 2.0 (1.8 +- 1.18) to 0.0 (0.1 +- 0.69) p<0.0001 | NR | NR |
| Wetta-Hall 2007153  (Poor) | NR | Physical health status Mental health status Internal HLOC Powerful others HLOC Chance HLOC | Preintervention vs. postintervention (vs. US population norm) mean: Physical health status, 35.5 vs. 41.3, p<0.001 (vs. 49.2) Mental health status, 41.8 vs. 43.4, p=0.59 (vs. 49.2) Internal Health Locus of Control (HLOC), 26.0 vs. 26.1, NS (25.6) Powerful others HLOC, 21.8 vs. 22.4, NS (19.2) Chance HLOC, 19.4 vs. 18.9, NS (16.2) | ED visits prior to enrollment: 3999 ED visits postenrollment: 2096 48% reduction, p<0.001 | NR | CCM process followed a cycle of assessment, planning, implementation, and evaluation. The first client visit encompassed both nursing and social needs assessment, goal setting with the client, initial coordination of referrals, and client education. Intervention planning and implementation included direct health and social service interventions, as well as supporting client connections to informal support networks. Direct intervention included activities such as careful matching of client to agencies, initial agency contacts, client orientation to services and form completion and visiting agencies and providers on behalf of the client to facilitate the development of informal social support, the teams structured time into client visits to provide the necessary orientation, training, and consultation with natural helpers (friend, neighbors, and community groups) in a culturally sensitive manner. |  |

Abbreviations: CM=case management, COPD=chronic obstructive pulmonary disorder, HLOC= Health Locus of Control, NA=not applicable, NR=not reported, QOL=quality of life.