

# Effectiveness of Outpatient Case Management for Adults With Medical Illness and Complex Care Needs

## Research Focus for Clinicians

In response to a public request regarding the benefits of currently available case management (CM) programs for adults with chronic disease(s) and complex care needs, the Oregon Evidence-based Practice Center funded by the Agency for Healthcare Research and Quality (AHRQ) performed a systematic review of 109 studies examining the effectiveness of CM in improving patient-centered outcomes, quality of care, and resource utilization. The studies reviewed were predominantly conducted in the United States and Europe and mainly included elderly patients. The number of patients in the included studies ranged from 50 to 18,400. Included studies examined complex care needs, which were defined broadly and were based on health care-resource utilization, patient health status, socioeconomic status, or patient self-management. Studies in which the primary clinical problem was a psychiatric disorder (other than dementia) and in which CM was used primarily to manage mental illness or a substance abuse disorder were excluded. Studies that provided CM for only short durations (30 days or less) were also excluded. An online version of this summary provides links directly to the sections of the full report with references for individual findings, inclusion criteria for the studies, and an explanation of the methods for rating the studies and determining the strength of evidence for individual findings. The online version of this summary and the full report are available at [www.effectivehealthcare.ahrq.gov/case-management.cfm](http://www.effectivehealthcare.ahrq.gov/case-management.cfm). This summary, based on the full report of research evidence, is provided to assist in decisionmaking along with consideration of a patient's values and preferences. Reviews of evidence should not be construed to represent clinical recommendations or guidelines.

## Background

Chronic diseases are the leading cause of illness, disability, and death in the United States. Nearly half of all adults in the United States have at least one chronic disease, and 43 percent of adults covered by both Parts A and B of Medicare have three or more chronic diseases. For these patients, health care resources generally are available but may be fragmented or poorly coordinated.

One strategy for improving the effectiveness and efficiency of care for chronic diseases is to develop programs that enhance coordination of care and implementation of care plans. CM is one such supplemental service, in which a person, usually a nurse or social worker, takes responsibility for coordinating and implementing a patient's care plan either alone or in conjunction with a team of health professionals. The evolution of CM models in health care has led to use of the term "case management" to describe a wide variety of interventions. As a result, there is no consensus about the core components of CM.

In the context of chronic illness care, clinical functions are central to the role of a case manager; however, he or she also performs coordinating functions. Clinical functions of the case manager include disease-oriented assessment and monitoring, medication adjustment, health education, and self-care instructions. The distinct but complementary coordinating functions performed by a case manager include helping patients navigate health care

systems, connecting patients with community resources, orchestrating multiple facets of health care delivery, and/or assisting with administrative and logistical tasks.

A case manager can play distinctly different roles such as serving as:

- A care provider who helps patients to improve their self-management skills and/or helps caregivers to be more effective in helping and supporting patients
- A collaborative member of the care delivery team who promotes better communication with providers and advocates for the implementation of care plans
- A patient advocate who evaluates patient needs and works to surmount problems with access to clinical services

Individual CM programs usually are customized for the clinical problems of the population being served. Thus, a CM program for homeless people with AIDS has a much different mix of activities than a program serving patients with dementia and their caregivers. CM tends to be more intensive in time and resources than other chronic illness management interventions; therefore, it is important to evaluate the specific value of this service.

## Conclusions

The conclusions reached in this report generally pertain to specific patient populations, since CM interventions are customized to the patient groups served.

Overall, the CM interventions tested in the reviewed studies were associated with small changes in patient-centered outcomes, quality of care, and health care-resource utilization.

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## Conclusions (Continued)

Specific findings of this review included:

1. CM tends to improve patient satisfaction with care for some conditions (congestive heart failure [CHF] and cancer) and increase patient perception of care coordination (patients with multiple chronic diseases).
2. CM improves the quality of care, particularly for patients with illnesses that require complex treatments (CHF, tuberculosis [TB], and cancer).
3. For some medical conditions, CM improves medication adherence and self-management skills (CHF and TB).
4. CM interventions showed mixed results in improving patients' quality of life and functional status.
5. For the caregivers of patients with dementia, targeted CM programs improve levels of stress, burden, and depression.

While low-level evidence suggested that CM can improve the utilization of some types of health care resources in patients with multiple chronic diseases who have greater disease burden and chronic homelessness, the effects of CM on health care-resource utilization and on costs of care are minimal.

However, the impact of CM may have been greatest when the CM was targeted toward patients who previously had the highest levels of health care utilization. This implies that patients with the greatest need for assistance with clinical management and care coordination, patients with low levels of social support, and/or patients at highest risk for poor outcomes might be more likely to benefit from CM.

Low-level evidence also showed that CM produces better outcomes when it is characterized by intense programs with greater contact time, longer duration of interventions, face-to-face visits, integration of programs with patients' usual care providers, and incorporation of training protocols in the interventions.

## Clinical Bottom Line

### CM Programs That Serve Patients With Multiple Chronic Diseases (Specifically Older Patients)

#### Patient Experience

- Increased the perception of patients that their care was better coordinated ●●●

#### Clinical Outcomes

- Did not improve functional status or overall mortality ●●●

#### Resource Utilization

- Were more effective for preventing hospitalizations when case managers had greater personal contact with patients and physicians ●○○
- Were more effective for reducing hospitalization rates among patients with greater disease burden ●○○
- Did not reduce overall hospitalization rates ●●●
- Did not reduce Medicare expenditures ●●●

### CM Programs That Serve Frail Elderly Patients

#### Clinical Outcomes

- Did not affect mortality ●○○

#### Resource Utilization

- Did not reduce nursing home admissions or acute-care hospitalizations ●○○

### CM Programs That Serve Patients With Dementia

#### Patient Experience

- Reduced caregiver depression at 2 years and caregiver burden at 1 year ●●○

#### Quality of Care

- Increased adherence to clinical guidelines for dementia care when focused on those guidelines ●○○

#### Clinical Outcomes

- Delayed nursing home placement of patients with dementia who have in-home spouse caregivers when program duration was longer than 2 years ●○○
- Did not result in significant delays in nursing home placement if the programs had durations of 2 years or less ●●○
- Did not lower mortality rates ●●●
- Did not result in changes in the behavioral symptoms of patients ●●○

#### Resource Utilization

- Did not result in reduction of health care expenditures at 1 year ●●○

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## Strength of Evidence Scale

High: ●●● High confidence that the evidence reflects the true effect. Further research is very unlikely to change the confidence in the estimate of effect.

Moderate: ●●○ Moderate confidence that the evidence reflects the true effect. Further research may change the confidence in the estimate of effect and may change the estimate.

Low: ●○○ Low confidence that the evidence reflects the true effect. Further research is likely to change the confidence in the estimate of effect and is likely to change the estimate.

Insufficient: ○○○ Evidence either is unavailable or does not permit a conclusion.

## Clinical Bottom Line (Continued)

### CM Programs That Serve Patients With Congestive Heart Failure

#### Patient Experience

- Increased patient satisfaction ●●○

#### Quality of Care

- Increased patient adherence to recommended disease self-management behaviors ●●○
- Were more effective in improving patient outcomes when case managers were a part of a multidisciplinary team of health care providers ●○○

#### Clinical Outcomes

- Improved quality of life but did not affect mortality ●○○

### CM Programs That Serve Adults With Diabetes

#### Clinical Outcomes

- Improved glucose control ●○○
- Did not improve management of lipids or weight/body mass index ●●○
- Were not effective at reducing mortality ●○○

#### Resource Utilization

- Were not effective at reducing hospitalization rates ●○○

### CM Programs That Serve Patients With Chronic Infection

#### Quality of Care

- Improved rates of successful treatment for TB in vulnerable populations who were in short-term programs that emphasized medication adherence ●●○

#### Clinical Outcomes

- Did not improve survival among patients with HIV infection ●○○

### CM Programs That Serve Patients With Cancer

#### Patient Experience

- Improved patient satisfaction with care ●●○

#### Quality of Care

- Were effective in increasing the receipt of appropriate (guideline-recommended) cancer treatment ●●○
- Were more effective when the intensity and duration of the intervention were greater, the program was integrated with patients' usual care providers, and the interventions were structured through preintervention training and care protocols ●○○

#### Clinical Outcomes

- Were effective in improving selected cancer-related symptoms and functioning (physical, psychosocial, and emotional) but did not improve overall quality of life or survival ●○○

#### Resource Utilization

- Had little effect on overall health care-resource utilization and cost of care ●○○

### CM Programs That Serve Patients With Other Clinical Conditions

#### Resource Utilization

- Reduced emergency department visits among patients with chronic obstructive pulmonary disease and among the homeless population ●○○

## Additional Information

Based on the entire range of interventions described in the included studies, the types of patients who potentially could benefit from CM generally fell into four categories:

- Patients with progressive, life-threatening chronic diseases that can be improved with proper treatment, such as CHF or HIV infection
- Patients with progressive, debilitating, and often irreversible diseases for which supportive care can enhance independence and quality of life, such as dementia or multiple chronic diseases in the aged
- Patients with progressive chronic diseases for which self-management can improve health and functioning, such as diabetes mellitus
- Patients for whom serious social problems impair their ability to manage disease, such as being homeless

## Gaps in Knowledge

Published trials evaluating the effectiveness of CM in various patient populations have the following limitations:

- Effective risk-assessment tools for choosing candidates for CM are lacking. Research studies have not compared risk assessment tools or determined which patients achieve the greatest benefits from CM. Risk assessment criteria for choosing candidates for CM could include:
  - Demographics such as age, sex, and ethnicity
  - Living situation and ability to meet basic living needs
  - Access to primary care and other health care services
  - Measures of social support
  - Health care-resource utilization profiles
  - Clinical risk factors for adverse outcomes
- Information is limited on how the effectiveness of CM programs varies with patient characteristics such as disease burden, age, ethnicity, level of social support, and socioeconomic status.

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## Gaps in Knowledge (Continued)

- There is no uniform, consensus definition for CM and no comparisons of CM with other types of interventions.
- There is little or no information about the extent to which CM programs are integrated with the usual source of care.
- There is imprecision about the intensity of CM. Existing trials have infrequently examined whether patient outcomes are influenced by the frequency of case manager contact, the length and content of the contacts, and the approach to followup of problems.
- Understanding of the correlation between CM duration and the benefits achieved is lacking. The duration of the intervention in most trials seems to have been arbitrarily set at 1 to 2 years.

All these limitations should be addressed in future studies of CM.

Other CM elements that should be explicitly described in future research include:

- Case manager experience
- Training received by case managers
- Specific functions of case managers and the distribution of effort devoted to different activities
- Use of protocols, guidelines, and information technology
- Modes of contact (clinic visits, home visits, and telephone calls)
- Average caseload
- Relationship to other health care providers

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## Ordering Information

For electronic copies of *Managing Care for Adults With Long-term Medical Illnesses, A Review of the Research*, this clinician research summary, and the full systematic review, visit [www.effectivehealthcare.ahrq.gov/case-management.cfm](http://www.effectivehealthcare.ahrq.gov/case-management.cfm). To order free print copies, call the AHRQ Publications Clearinghouse at 800-358-9295.

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## Source

The information in this summary is based on *Outpatient Case Management for Adults With Medical Illness and Complex Care Needs*, Comparative Effectiveness Review No. 99, prepared by the Oregon Evidence-based Practice Center under Contract No. 290-2007-10057-I for the Agency for Healthcare Research and Quality, January 2013. Available at [www.effectivehealthcare.ahrq.gov/case-management.cfm](http://www.effectivehealthcare.ahrq.gov/case-management.cfm). This summary was prepared by the John M. Eisenberg Center for Clinical Decisions and Communications Science at Baylor College of Medicine, Houston, TX.

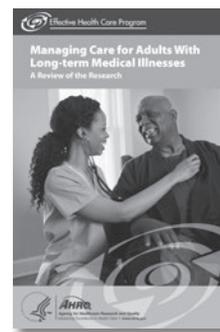
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## What To Discuss With Your Patients

- What CM is and that the option of involving a case manager in managing the patient's medical condition might exist, depending on the patient's specific medical condition(s) and health care plan
- Whether the case manager will meet with the patient at his or her home, in your office, or by phone and the frequency of the meetings
- How long the case manager might work with the patient
- That a case manager will work with the patient's health care team, although the level of interaction might vary according to the type of CM program available to the patient
- That a case manager can be an advocate who evaluates the patient's needs and works to surmount problems with access to clinical services
- How CM might affect the patient's experience of care (patient satisfaction)
- The available evidence for the effectiveness of CM in improving quality-of-care outcomes (such as receipt of guideline-recommended clinical services, medication adherence, and attending health care appointments)
- The available evidence for the effectiveness of CM in improving patient-related outcomes (quality of life, ability to stay at home, and health-related outcomes such as mortality and disease symptoms) or caregiver outcomes (such as stress and depression) given the patient's specific medical condition(s)
- The available evidence for the effectiveness of CM in improving health care resource-utilization outcomes (such as hospitalization rates, health care costs, and physician and/or emergency department visits)

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## Resource for Patients and Caregivers



*Managing Care for Adults With Long-term Medical Illnesses, A Review of the Research* is a companion to this clinician research summary. It can help adults with chronic disease conditions and complex care needs talk with their health care professionals about the benefits associated with the incorporation of CM programs into the management of their illness.