

# CHCS

Center for  
Health Care Strategies, Inc.

**FACES OF MEDICAID**  
DATA SERIES

## **Literature Review: Evidence-Based Clinical Models for Multimorbid Patients Not Specific to a Multimorbidity Pattern**

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The resource is part of the *Faces of Medicaid* analysis, *Clarifying Multimorbidity Patterns to Improve Targeting and Delivery of Clinical Services for Medicaid Populations*,<sup>a</sup> which was undertaken by the Center for Health Care Strategies (CHCS) and The Johns Hopkins University School of Medicine and Bloomberg School of Public Health. The analysis was designed to identify high-priority multimorbidity patterns within Medicaid populations to help state purchasers and health plans to improve the delivery and efficiency of health care services. The analysis includes a summary of literature and interventions that are appropriate for specific patterns of multimorbidity. Over the last 20-30 years, however, many clinical models have been developed and tested for patients with multimorbidity, often in the context of geriatrics, regardless of the specific pattern of multimorbidity.<sup>b</sup>

Many of the interventions that target multimorbid patients have been described by Boulton<sup>c</sup> and colleagues in a comprehensive review of successful models of care for older adults with chronic conditions. That report identified general models that were associated with positive outcomes for patients with chronic conditions and multimorbidity. This compendium summarizes these and other relevant studies within the following broad categories:

1. Interdisciplinary Primary Care Teams;
2. Care/Case Management;
3. Preventive Home Visits;
4. Outpatient Comprehensive Geriatric Assessment and Geriatric Evaluation and Management;
5. Pharmaceutical Care;
6. Chronic Disease Self-Management;
7. Proactive Rehabilitation;
8. Transitional Care;
9. Hospital at Home;
10. Nursing Home; and
11. Medicaid Studies.

While not all of the models outlined in this resource may be immediately applicable to Medicaid delivery systems, knowledge of these models can offer value to Medicaid stakeholders. In addition, this compendium also lists several studies on models that have been studied in Medicaid populations.

To view the full analysis, *Clarifying Multimorbidity to Improve Targeting and Delivery of Clinical Services for Medicaid Populations*, and corresponding materials, including a bibliography of full citations included in this literature review, visit [www.chcs.org](http://www.chcs.org).

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<sup>a</sup> C. Boyd, B. Leff, C. Weiss, J. Wolff, R. Clark, and T. Richards. *Clarifying Multimorbidity to Improve Targeting and Delivery of Clinical Services for Medicaid Populations*. Center for Health Care Strategies, Inc., December 2010. To view the full analysis and corresponding materials, visit [www.chcs.org](http://www.chcs.org).

<sup>b</sup> The literature review references studies published since 2000.

<sup>c</sup> C. Boulton, A.F. Green, L.B. Boulton, J.T. Pacala, C. Snyder, and B. Leff. "Successful Models of Chronic Care for Older Adults with Chronic Conditions: Evidence for the Institute of Medicine's 'Retooling for an Aging America' Report." *Journal of the American Geriatrics Society*, 2009 Dec; 57(12):2328-37.

## 1. Interdisciplinary Primary Care Teams

Hughes 2000. Randomized trial of Veteran Affairs home-based primary care. Intervention associated with improvements in quality of life, satisfaction with care, and hospital readmissions at six months.

Unützer 2002. Randomized trial of collaborative care management for late life depression. Intervention associated with better depression outcomes, less functional impairment, and better quality of life.

Unützer and colleagues have published many follow-up reports focusing on specific outcomes of this care model among groups of patients with specific comorbidities in addition to depression, including arthritis.

McAlister 2004. Systematic review of multidisciplinary strategies for management of heart failure patients at high risk of readmission. These programs reduce hospital admissions for heart failure and may also reduce mortality.

Rabow 2004. Trial of outpatient palliative care consultation for patients with advanced heart failure and other conditions. Intervention associated with improvements in symptoms, but not in pain or depression outcomes.

Callahan 2006. Randomized study of collaborative care model for patients with Alzheimer's disease in primary care. Intervention associated with improvements in quality of care and behavioral outcomes.

Kane 2003. Examined outcomes of community and nursing home dually eligible persons enrolled in Minnesota Senior Health Options (MSHO). Few differences between MSHO patients and controls except lower caregiver burden.

Kane 2006. Describes outcomes of the Wisconsin Partnership Program, a variant of the PACE model. Important paper for Medicaid programs as the WPP model was not as effective as PACE at controlling hospital and emergency department utilization.

Battersby 2007. Australian study of a statewide application of a generic model of chronic illness care. Associated with improvement in health status scores.

Counsel 2007. Randomized trial of the GRACE intervention of geriatric care management for low-income seniors. Intervention associated with improvements in general health, social functioning, and mental health scores. Reduction in hospitalization in high-risk group in the second year of the study.

Boyd 2008. Results from non-randomized pilot of guided care for multimorbid older adults. Guided care was associated with improvement in quality of primary care received by older multimorbid adults.

Leff 2009. Report of early health service utilization outcomes from guided care randomized trial. Early results suggest that guided care is associated with less use of expensive health services among multimorbid patients.

Boult 2008. Early results guided care randomized trial demonstrate that guided care improves important aspects of the quality of health care for multimorbid older persons.

Alkema 2007. Randomized trial of telephonic social care management based on a care advocate model for older adults in managed care was associated with lower mortality.

## **2. Care / Case Management**

Anttila 2000. Randomized study of discharge program for elderly patients found improvements in costs in the intervention group.

Martin 2004. Randomized study of open trial of population-based disease and case management in a Medicare managed care organization found improvements in satisfaction with the health plan and social function, and lower use of skilled nursing home services associated with the intervention.

Markle-Reid 2006. Review of literature of home-based nursing health promotion for older people. Findings suggest that a diversity of home visiting interventions carried out by nurses can be associated with positive health and utilization outcomes.

Holtz-Eakin 2004. Provides a CBO analysis of the literature on disease management programs.

Whellan 2005. Meta-analysis and review of heart failure disease management randomized trials finds evidence that such programs can significantly decrease hospitalization for patients with heart failure.

Peikes 2009. Report on the 15 Medicare Coordinated Care Demonstration program studies. These programs were largely ineffective as they lacked strong transitional care component.

## **3. Preventive Home Visits**

Elkan 2001. Systematic review and meta-analysis of effectiveness of home-based support for older people finds that home visits to older people can reduce mortality and admission to long-term institutional care.

Stuck 2002. Meta-regression analysis of home visits. Findings suggest that appropriately targeted programs can prevent functional decline and nursing home admission, and reduce mortality.

Huss 2008. Systematic review and meta-analysis of randomized trials of multidimensional preventive home visits for community-dwelling older adults finds potential to reduce disability and nursing home admissions in appropriately targeted patients.

## **4. Outpatient Comprehensive Geriatric Assessment and Geriatric Evaluation and Management**

Boult 2001. Randomized trial of outpatient geriatric evaluation and management focused on community-dwelling older adults as high risk of hospital admission. Positive effects on functional outcomes with no effects on health service utilization.

Phibbs 2006. Randomized study of geriatric evaluation and management on nursing home use and health care costs found reductions in nursing home admission, but no effects on costs, and only modest effects on health status.

Caplan 2004. Randomized study of comprehensive geriatric assessment and multidisciplinary intervention after discharge from the emergency department for older adults found reductions in admission to hospital and emergency department utilization at 30 days.

## 5. Pharmaceutical Care

Crotty 2004. Randomized trial of a geriatric medication advisory service in nursing homes without direct patient contact demonstrated improved medication appropriateness indices for patients in intervention group.

Wu 2006. Randomized trial of telephone counseling by a pharmacist in patients receiving polypharmacy demonstrated improved compliance and reductions in mortality.

Spinewine 2007. Randomized study of collaborative approach on quality of prescribing for geriatric inpatients demonstrated improvements in medication appropriateness and ACOVE underuse criteria.

## 6. Chronic Disease Self-Management

Chodosh 2005. Meta-analysis of 53 studies suggested that chronic disease self-management interventions for older adults led to important effects among diabetics and patients with hypertension.

## 7. Proactive Rehabilitation

Griffiths 2000. Randomized study of outpatient multidisciplinary pulmonary rehabilitation showed effectiveness at one year with reductions in hospital days and functional status.

Gill 2002. Randomized trial of home-based intervention including physical therapy focusing on risks for functional decline demonstrated reduced progression of functional decline among targeted frail adults.

Tinetti 2002. Evaluation of a program of restorative care for older adults receiving acute episode of home care services demonstrated better likelihood of remaining at home and lower risk of emergency department use.

Gitlin 2006. Evaluation of multicomponent intervention for older adults with functional impairment that included occupational and physical therapy, and fall recovery techniques. Intervention patients demonstrated reduction in mortality.

Gitlin 2006. Randomized study of multicomponent intervention for older adults with functional impairment that included occupational and physical therapy, and fall recovery techniques demonstrated improvements in quality of life outcomes.

## 8. Transitional Care

Phillips 2004. Meta-analysis of comprehensive discharge planning with post-discharge support for older patients with heart failure demonstrated significant reduction in readmission rates as well as potential improvements in survival and quality of life without increasing costs.

Coleman 2006. Randomized trial of care transition model that used a transitions coach and self-management model. Demonstrated lower rehospitalization rates at 30 and 90 days and cost savings.

## **9. Hospital at Home**

Shepperd 2009. Systematic review and meta-analysis of substitutive Hospital at Home demonstrated a 38% reduction in mortality at six months, enhanced satisfaction with care, and lower costs.

Leff 2005. Evaluation of National Demonstration of U.S. Hospital at Home demonstrated lower rates of complications, improved satisfaction with care, and lower costs of care.

Shepperd 2009. Review of early discharge Hospital at Home programs. 26 trials reviewed. Some improvements in satisfaction with care. Results on other outcomes varied by condition studied.

## **10. Nursing Home**

Kane 2004. Study of Evercare model of primary care in the nursing home setting demonstrated that Evercare residents had fewer preventable hospitalizations.

## **11. Medicaid Studies**

Lewis 2004. Discusses savings opportunities for Medicaid disease management through outsourced disease management programs.

Lind 2007. Describes evaluation of Washington's Medicaid disease management program for clients with asthma, COPD, heart failure, and diabetes.

Greene 2008. Report on Medicaid demonstration project designed to measure the business case for selected quality interventions in high-risk high-cost patient population in 10 Medicaid managed care organizations.

Zhang 2008. Evaluation of chronic disease management on outcomes and costs of care for Medicaid beneficiaries that studied over 35,000 patients suggests the disease state management improved patients' drug compliance and quality of life while reducing emergency department, hospital, and physician office visits. Benefits not seen in all disease categories treated.