



Best Practices in Care Management for Senior Populations

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Care Management is a service designed to help patients and their caregivers manage medical conditions more effectively, in order to improve health and reduce the need for hospitalizations and emergency department visits. The concept arose in the past decade from disease management programs of the 1990s, which focused on individual diseases rather than more comprehensive consideration of patients' needs. Care managers are generally nurses or social workers who work closely with patients and caregivers to assess health risks and needs, collaboratively develop care plans, and coach patients in self-care.^{a,1} Care managers strive to ensure close communication between patients and physicians, and among all providers involved in patients' care.²

Health care providers increasingly offer care management, driven in part by reimbursement changes under the Affordable Care Act that sparked provider interest.^{3,4} Health plans are encouraging this trend through reimbursement policies and are moving away from offering care management directly or through vendor-supplied services.^{3,5} This analysis focuses on the question: do care management programs work for senior populations and, if so, what characteristics are shared by the most effective programs?

Key Research Findings

Research shows that care management programs generally improve quality of care, but cost reduction is hard to achieve, especially for patients age 85 and older.⁶ The research also identifies several key attributes that can increase the likelihood of a program to achieve improved quality and efficiency.

Randomized Controlled Trials

Hospital-to-home care transition programs delivered in health systems are most effective at reducing costs and improving quality.^b Two proven models are Eric Coleman's Care Transitions Intervention and Mary Naylor's Transitional Care Model.¹ In the Coleman program, advanced practice nurses contacted high-risk

^a All references in this paper correspond to item numbers in the attached Annotated Bibliography, which details the research on care management.

^b For additional detail on care transitions, see the CHRT report Care Transitions: Best Practices and Evidence-based Programs, available at <http://www.chrt.org/assets/policy-papers/CHRT-Care-Transitions-Best-Practices-and-Evidence-based-Programs.pdf>.

The Center for Healthcare Research & Transformation (CHRT) illuminates best practices and opportunities for improving health policy and practice. Based at the University of Michigan, CHRT is a non-profit partnership between U-M and Blue Cross Blue Shield of Michigan designed to promote evidence-based care delivery, improve population health, and expand access to care.

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elderly patients as they were discharged from the hospital, then followed up with the patients by conducting one home visit and three phone calls over a four-week period. In a 2006 study, this program showed a 30 percent reduction in 30-day admissions and a 20 percent reduction in patient costs.^{7,8}

Naylor's more intensive model provided high-risk, high-cost elderly patients with care management for three months after discharge from the hospital. Advanced practice nurses regularly visited patients' homes and met with their primary care physicians, and patients could reach care managers by phone seven days a week. As reported in a 2004 study, readmissions dropped by 36 percent and patient costs by 39 percent (nearly \$5,000 per patient) within one year.^{7,9}

Care management delivered in other provider settings, including primary care and multispecialty groups, has shown quality improvements but little evidence of cost reduction in RCTs.¹ Evaluations of vendor-supported care management are inconclusive. The Congressional Budget Office determined that the methodologies that vendors used to evaluate their own products were too weak for cost or quality claims to be reliable,¹ and the few independent studies of vendor-delivered programs showed limited quality impacts with no evidence of cost reduction.¹⁰

Demonstration Projects

The Centers for Medicare and Medicaid Services (CMS) runs demonstration projects to test innovative health programs for seniors and measure their impact. Few CMS demonstration projects of care management programs have achieved sufficient cost-savings to offset implementation expenditures. Of the 34 CMS-funded care management demonstration projects since 1999, two raised costs and 31 had no statistically significant impact on reducing costs. There are, however, two programs that did improve quality and produce savings: the Program of All-Inclusive Care for the Elderly (PACE), which began as a CMS demonstration in the 1970s, and a recent demonstration project at Massachusetts General Hospital.^{6,11}

PACE programs generally save money over time but have substantial start-up costs. PACE provides integrated care to elderly, high-risk patients through multidisciplinary teams. Enrollees' care is managed in adult day care centers, with home care offered as needed. The program dramatically improves patients' functional status and quality of life, decreases mortality, and reduces hospital and nursing home use.⁷ PACE programs have grown slowly, however, largely due to strict program requirements. These requirements include leaving personal physicians in favor of PACE physicians and mandatory attendance at adult day care. Programs that modify the PACE model to increase patient flexibility have not produced the same magnitude of cost savings or quality improvements. For example, in a comparison of a Wisconsin PACE program to a more flexible local competitor based on the PACE model, PACE participants were 68 percent less likely to be hospitalized and 59 percent less likely to be admitted for preventable conditions.¹¹

Massachusetts General Hospital ran the only other CMS demonstration that achieved statistically significant cost savings within three years, reducing Medicare expenditures by an estimated 7 to 11 percent by decreasing hospital admissions and emergency department visits. The program enrolled high-risk patients receiving care from the health system and affiliated primary care clinics. Care managers were employed by primary care physicians and managed patients' care both in person and by phone. The care managers also had access to the health system's electronic medical records to facilitate communication between providers.^{6,12}

Patient-Centered Medical Homes

Patient-Centered Medical Homes (PCMHs) are the preferred care management delivery model for many health systems, insurers, and state Medicaid agencies.^{2,13,14} PCMHs are new ways of organizing primary care practices to promote quality of care, coordination between providers, and increased responsiveness to patients' needs. Care management is a central component of most PCMH demonstration projects. As of 2010, 14 PCMH interventions had demonstrated at least a 10 percent improvement in quality and cost metrics, although some cost measures were not statistically significant. Most successful PCMH programs integrated care managers within practices as part of multidisciplinary teams, aligned financial incentives between providers and payers, and leveraged electronic medical records to increase communication between providers.^{14,15,16}

Best Practices

Care management programs that successfully reduced costs and improved quality did the following:

- **Provided face-to-face contact between patients and care managers.** The frequency of in-person contact varied from an initial appointment in the PCP's office to regular home visits.^{1,2,6,10,17,18}
- **Integrated care management within primary care practices.** In the best programs, care managers were co-located with primary care physicians or, at minimum, regularly visited the physicians and managed the care of all eligible patients in the practice.^{1,2,5,9,14} In one model, care managers worked in up to three small practices with space set aside for them in each, in order to build strong communication with all physicians.³
- **Targeted patient selection.** High-risk patients with multiple chronic conditions—generally a subset of the elderly—benefit most and have the greatest potential for cost savings.^{1,2,17}
- **Stratified services based on patient needs.** Stratifying high-risk patients allows more complex patients to receive more intensive services; care managers that manage the most high-risk patients require lower caseloads.^{1,17}
- **Focused on transitions of care from the hospital to other settings.** Hospital-to-home transitions are one of the best cost-saving measures, and engage patients when they may be most receptive to behavior change.^{1,7,18}
- **Coached patients in self-management techniques.** Coaching helps patients engage in self-care, manage their medications, and recognize and respond to “red flags” for their conditions.^{1,18}
- **Used electronic medical records.** Electronic medical records can be leveraged to assess patients' health risks, reduce duplication, facilitate communication between providers, and provide feedback to primary care physicians.^{2,6,19}

While including these elements does not guarantee programs' success, the research is strong that these features do create the foundation for high-quality, cost-saving care management services.

Conclusion

Care management can help patients and caregivers mitigate the impact of chronic conditions, and reduce the need for expensive health care services such as hospitalizations and emergency department visits. However, while many care management programs have improved quality of care, relatively few have achieved cost savings. This paper outlines best practices that can help providers and health plans invest in care management programs that are designed to promote both quality and efficiency.

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Attachment: Annotated Bibliography

1. **T. Bodenheimer, R. Berry, R. 2009. *Care Management of Patients with Complex Health Care Needs* (San Francisco, CA: Robert Wood Johnson Foundation).**

https://www.statereforum.org/sites/default/files/cm_report_final_0.pdf (accessed 3/19/14).

This seminal report offers a wealth of information about the evidence base for care management, detailing what works in research and practice. The authors considered evidence from randomized controlled trials (RCTs), Medicare demonstration projects, and programs initiated by health systems and private insurers. They concluded that while most care management programs successfully improved quality of care, few achieved cost savings. The authors identified four key elements needed to both save money and improve quality: (1) targeting only high-risk patients, (2) incorporating in-person contact between patients and care managers (including home visits), (3) hiring highly-trained care managers to work with primary care physicians (PCPs) in multidisciplinary teams, and (4) coaching patients in self-care.

The authors concluded that hospital-to-home care transitions programs are most effective at reducing cost and improving quality. Two successful models—Eric Coleman’s Care Transitions Intervention and Mary Naylor’s Transitional Care Model (as described below in items 8 and 9)—demonstrated cost-savings in RCTs and have been adapted to real-world settings by health systems and plans.

2. **E. S. Fisher, K. Grumbach. 2011. *Creating Value: Better Care Coordination. Better to Best: Value-Driving Elements of the Patient-Centered Medical Home and Accountable Care Organizations* (Washington, DC: Health2 Resources). http://www.pccpcc.org/sites/default/files/media/better_best_guide_full_2011.pdf (accessed 3/19/14).**

Under the Affordable Care Act (ACA), Accountable Care Organizations (ACOs) and Patient-Centered Medical Homes (PCMHs) are poised to become leading delivery models for care management. This report proposes a model for PCMH and ACO collaboration in coordinating care. In the authors’ model, PCMHs take responsibility for patient-oriented care management activities, including assessing patient needs, developing a care plan, and educating patients. ACOs are responsible for aligning community resources with patient needs and addressing gaps in services. Together, PCMHs and ACOs coordinate care between providers, facilitate hospital-to-home transitions, and connect patients to community resources.

3. **Helen Lin, MSc, and Cabell Jonas, PhD. Consultant at the Advisory Board Company and Senior Analyst at the Advisory Board Company, respectively. November 15, 2012. Personal communication.**

Helen Lin and Cabell Jonas discussed current trends in care management from an industry-wide perspective. They observed a trend toward provider-delivered care management, as opposed to care management delivered by payers and providers, and noted that providers were increasingly interested in offering this service.

4. **S. Sanchez. September 27, 2012. Don't Take Your Eye Off Inpatient Care Coordination Opportunities. *The Advisory Board Company*. <http://www.advisory.com/research/care-transformation-center/care-transformation-center-blog/2012/09/dont-take-your-eye-off-inpatient-care-coordination-opportunities> (accessed 3/19/14).**

In response to ACA reimbursement changes, numerous providers are implementing care management initiatives to reduce readmissions. One tactic highlighted by the author is to hire care managers in inpatient settings to coordinate patients' hospital care as a part of multidisciplinary teams and to facilitate hospital-to-home transitions.

5. **James Bridges, MD. Executive Medical Director of the UAW Trust-Key Accounts, Blue Cross Blue Shield of Michigan. October 18, 2012. Personal communication.**

James Bridges described current trends in care management from the perspective of Blue Cross Blue Shield of Michigan (BCBSM). He indicated that it's widely believed within BCBSM that provider-delivered care management is the best way to engage patients in care management, and BCBSM can serve as a catalyst for this form of care management through their payment policy. BCBSM is generally moving away from providing services through vendors.

6. **L. Nelson. 2012. *Lessons from Medicare's Demonstration Projects on Disease Management and Care Coordination* (Washington, DC: Congressional Budget Office). http://www.cbo.gov/sites/default/files/cbofiles/attachments/WP2012-01_Nelson_Medicare_DMCC_Demonstrations.pdf (accessed 3/19/14).**

This Congressional Budget Office analysis evaluated the results of 34 programs financed through six Centers for Medicare and Medicaid Services (CMS) demonstration projects in the past decade. Only one program, run by Massachusetts General Hospital, achieved statistically significant cost savings. Two programs significantly increased patient costs and of the remaining 31 programs, 10 showed non-significant cost reduction. Savings were most difficult to realize among patients age 85 years and older. Programs varied widely and were administered by health systems, private health plans, and vendors. Patients were targeted based on specific diseases, risk scores, or as part of an existing population (e.g., patients in one health system). In the programs that achieved the greatest cost and quality improvements, care managers had substantial in-person contact with both patients and physicians, and were integrated within physician practices or health systems. The authors concluded that these elements are necessary for program success.

7. **R. Burton. September 13, 2012. *Health Policy Brief: Improving Care Transitions. Health Affairs. (Issue Brief)*. http://www.healthaffairs.org/healthpolicybriefs/brief.php?brief_id=76 (accessed 3/19/14).**

Managing care transitions is a key element of care coordination. Inadequate care transitions accounted for a large proportion of the estimated \$25 billion to \$45 billion wasted health care spending in 2011. This article highlighted two proven care transition models that have been adopted by more than 700 organizations nationwide: Eric Coleman's Care Transitions Intervention and Mary Naylor's Transitional Care Model, as described in items 8 and 9. Care transitions are now a priority for many health systems, due to reimbursement changes under the ACA. These include ACOs' shared savings programs; reduced Medicare and

Medicaid reimbursement for hospitals with high readmission rates; and additional payment to PCMHs for care transition services.

8. E.A. Coleman, C. Parr, S. Chalmers, S. Min. 2006. *The Care Transitions Intervention: Results of a Randomized Controlled Trial. Archives of Internal Medicine 166: 1823–28.*
<http://www.caretransitions.org/documents/The%20CTI%20RCT%20-%20AIM.pdf> (accessed 3/19/14).

This RCT of University of Colorado’s Care Transition Intervention developed by Eric Coleman demonstrated the savings potential of hospital-to-home care management interventions. Results showed a 30 percent reduction in 30-day readmissions, 17 percent reduction in 180-day readmissions, and 20 percent drop in average patient costs. The intervention, conducted in a large integrated delivery system in Colorado, paired advanced practice nurses (APNs) with high-risk elderly patients being discharged from the hospital. APNs met with patients in the hospital, then conducted one home visit and three phone calls over four weeks following the patient’s discharge.

9. M.D. Naylor, D.A. Broton, R.L. Campbell, et al. 2004. *Transitional Care of Older Adults Hospitalized with Heart Failure: A Randomized, Controlled Trial. Journal of the American Geriatrics Society 52: 675–84.*
<http://www.cha.com/pdfs/Quality%5CReducing%20Hospital%20Readmissions/Related%20Articles/Transitional%20Care%20of%20Older%20Adults.pdf> (accessed 3/19/14).

This RCT of University of Pennsylvania’s Transitional Care Model developed by Mary Naylor was the first to demonstrate the effectiveness of hospital-to-home care transitions. Results showed a 36 percent drop in readmissions and a 39 percent cost reduction per patient (nearly \$5,000) one year after the patient’s discharge. The program enrolled high-risk, high-cost elderly patients: on average, patients were age 76 and had more than six chronic conditions. APNs provided regular home visits for three months and were available by phone seven days a week.

10. A. Chen, R. Brown, D. Esposito, J. Schore, R. Shapiro. 2008. *Report to Congress on the Evaluation of Medicare Disease Management Programs* (Princeton, NJ: Mathematica Policy Research, Inc.).
http://www.mathematica-mpr.com/publications/PDFs/rptcongress_Diseasemgmt.pdf (accessed 4/9/14).

In this report to Congress, Mathematica Policy Research summarized their evaluation of three failed CMS disease management demonstration projects begun in 2002. Each program was vendor-run and provided services to at least 5,000 traditional Medicare enrollees. Programs were required to achieve budget neutrality within three years and were liable for any Medicare expenditures above this target. Ultimately, all three programs withdrew before the intended three-year mark and owed CMS millions because they did not reduce enrollees’ service use or expenditures. The authors identified poor management, unrealistic expectations, and the inherent difficulty of behavior change as reasons for the failure. Additional reasons are suggested by the broader evidence base: the program relied exclusively on phone-based contact between disease managers and patients, had no contact with PCPs, and focused on individual diseases without considering patients’ needs comprehensively.

11. R.L. Kane, P. Homyak, B. Bershadsky, S. Flood. 2006. Variations on a Theme Called PACE. *Journals of Gerontology* 61A(7): 689-93. <http://biomedgerontology.oxfordjournals.org/content/61/7/689.full> (accessed 3/19/14).

The authors of this article evaluated the impact of the Wisconsin Partnership Program (WPP), a more flexible variation on the Program for All-Inclusive Care of the Elderly (PACE) model, on the cost and quality of care. They compared the effects of the WPP program to a local PACE competitor to determine the relative impact of the two programs. In order to increase enrollment, WPP allows seniors to retain their PCP and reduces the adult day care attendance requirements. Results showed that this flexibility reduced efficacy: Wisconsin's PACE enrollees were less likely than WPP participants to go to the emergency department (ED), be admitted to the hospital for all causes, or be admitted for preventable conditions. The authors concluded that WPP enrollees may receive less preventive care because they do not have easy access to services through adult day care, and their PCPs may be less familiar with the needs of complex, elderly patients.

12. N. McCall, J. Cromwell, C. Urato. 2010. Evaluation of Medicare Care Management for High Cost Beneficiaries (CMHCB) Demonstration: Massachusetts General Hospital and Massachusetts General Physicians Organization (MGH) (Durham, N.C.: Research Triangle Institute). <http://www.massgeneral.org/News/assets/pdf/FullFTIreport.pdf> (accessed 3/19/14).

Research Triangle Institute's independent evaluation of Massachusetts General Hospital's CMS care management demonstration showed that the program resulted in significant cost and quality gains, including reduced mortality, hospital admissions and ED visits. The original intervention group, which participated from 2006 to 2009, had a return on investment (ROI) of 2.65 for CMS, meaning that CMS gained \$2.65 for each dollar invested. The health system expanded the program in 2007 to include additional participants, who achieved a higher ROI of 3.35 by the 2009 deadline. The program's success is attributed to features such as care managers' integration in PCP practices, face-to-face contact with patients, strong leadership support and physician buy-in, and use of electronic medical records to improve communication between providers.

13. F. Fields, E. Leshen, K. Patel, K. 2010. Driving Quality Gains and Cost Savings through Adoption of Medical Homes. *Health Affairs* 29(5): 819-26. <http://content.healthaffairs.org/content/29/5/819.full.pdf> (accessed 3/19/14).

This analysis of PCMHs identified four key aspects present in all successful examples: one of these is the presence of a care manager working closely with PCPs in multidisciplinary teams. Additional factors included expanded patient access, performance management tools, and effective incentive payments.

14. K. Grumbach, P. Grundy. 2010. Outcomes of Implementing Patient Centered Medical Home Interventions: A Review of the Evidence from Prospective Evaluation Studies in the United States (Washington, DC: Patient-Centered Primary Care Collaborative). <http://dhhs.nv.gov/HealthCare/Docs/MedicalHomes/Outcomes%20of%20Implementing%20Medical%20Home%20Interventions%20by%20the%20PCPCC%20-%20Nov%202010.pdf> (accessed 3/19/14).

The authors of this article identified 14 PCMH interventions that achieved both quality improvement and cost reduction. The highlighted programs were sponsored by health systems, private health insurers, state Medicaid programs, and other providers and county health plans, demonstrating the versatility of the PCMH

model. In general, most programs improved quality and cost metrics by over 10 percent, although some cost metrics were not statistically significant. ROI ranged from \$1.5 to \$2 for each dollar invested.

15. R. J. Gilfillan, J. Tomcavage, M. B. Rosenthal, et al. 2010. **Value and the Medical Home: Effects of Transformed Primary Care.** *American Journal of Managed Care* 16(8): 607-15. http://www.ajmc.com/publications/issue/2010/2010-08-vol16-n08/AJMC_10augGilfillan607to614 (accessed 4/9/14).

Geisinger Health System's ProvenHealth Navigator is considered a best-in-class PCMH model. Geisinger's evaluation of the program demonstrated care management's cost and quality impact on the Medicare Advantage population. The intervention resulted in statistically significant decreases of 18 percent for hospitalizations and 36 percent for readmission rates among elderly PCMH patients. This led to an estimated 7 percent decline in spending per member per month (the savings estimate was not statistically significant). This model targeted care management to high-risk patients and varied the intensity of services based on patient needs. Care management was provided by multidisciplinary teams with an emphasis on strong communication.

16. R. J. Reid, K. Coleman, E. A. Johnson, et al. 2010. **The Group Health Medical Home at Year Two: Cost Savings, Higher Patient Satisfaction, and Less Burnout for Providers.** *Health Affairs* 29(5): 835-43. <http://content.healthaffairs.org/content/29/5/835.full.pdf> (accessed 3/19/14).

The Seattle-based Group Health Cooperative's PCMH model is another high-profile care management success. Two years after Group Health Cooperative's PCMH was piloted in one of its clinics, patients who received care management through this PCMH had 36 percent fewer ED visits and 6 percent fewer hospitalizations than similar patient populations in other Group Health clinics (both reductions were statistically significant). The estimated savings resulting from these reductions was \$10 per member per month, after taking intervention costs into account (the savings estimate was not statistically significant). Quality improvements included increased patient satisfaction and decreased staff burnout.

17. R. S. Brown, D. Peikes, G. Peterson, J. Schore, C. M. Razafindrakoto. 2012. **Six Features of Medicare Coordinated Care Demonstration Programs that Cut Hospital Admissions of High-Risk Patients.** *Health Affairs* 31(6): 1156-66. <http://content.healthaffairs.org/content/31/6/1156.full> (accessed 3/19/14).

This recent analysis evaluated CMS' Coordinated Care Demonstration project and extrapolated key elements necessary for success. In four of 11 programs funded by this demonstration, a subgroup of high-risk patients saw long-term quality improvements, including reduced hospitalizations over multiple years, which generated sufficient savings to offset program costs. These were considered successful for improving quality while achieving cost neutrality or savings for high-risk patients. In at least three of these four programs, care managers had regular face-to-face contact with patients and PCPs, facilitated communication between providers, educated patients in self-care, assisted in medication management, and provided comprehensive transitional care post-hospitalization. The authors recommend that these features be adopted by all care management programs in PCMHs and ACOs. They believe that cost-savings are possible only if the care coordination interventions are targeted exclusively to high-risk patients, are highly efficient and have modest costs (approximately \$125-\$150 per member per month).

18. R. Brown. 2009. *The Promise of Care Coordination: Models that Decrease Hospitalizations and Improve Outcomes for Medicare Beneficiaries with Chronic Illnesses* (Princeton, NJ: Mathematica Policy Research). <http://www.nyam.org/social-work-leadership-institute/docs/N3C-Promise-of-Care-Coordination.pdf> (accessed 3/19/14).

This report examined the ongoing challenge of achieving cost-savings through care coordination. Given the failure of numerous demonstration projects to realize savings, Brown identified three categories of programs that showed evidence of real-world success: hospital-to-home care transitions, patient education/self-management, and coordinated care interventions. Care coordination here refers to care managers' role in coaching patients in self-care, monitoring their symptoms, and working with PCPs to plan ongoing care. Brown highlighted additional features considered necessary but not sufficient for program success, including frequent in-person contact between care managers, patients, and physicians; low caseloads; narrowly targeted patient populations; and prompt notification of PCPs when patients are discharged from the hospital.

19. Michigan Department of Community Health. September 8, 2011. *Michigan Primary Care Transformation Project: Information for Michigan POs/PHOs and Payers*. <http://www.mipcc.org/sites/mipcc.org/files/u4/MiPCT%20Summary%20Document%20Sept%208%202011%20V%205.pdf> (accessed 3/19/14).

The Michigan Primary Care Transformation (MiPCT) Project is a care management demonstration project funded by the CMS Multi-payer Advanced Primary Care Practice Initiative. Providers are offered financial incentives to deliver care management, through additional monthly payments from CMS for each member and new reimbursement codes from private health plans that cover these services. MiPCT provides participating providers with care manager training and tools for implementing evidence-based care coordination models tailored to their own setting. To achieve cost-neutrality within three years, MiPCT has adopted the best practices outlined in the evidence base. Care management is arranged in tiered services to maximize cost-effectiveness, with the most complex patients receiving the most intensive care. Care managers are embedded within PCP practices in order to maximize collaboration, and frequent in-person contact between patients and care managers established personal relationships. To coordinate the activities of different providers, care managers facilitate hospital-to-home transitions, notify PCPs of recent hospitalizations, and serve as a communication hub. Care managers educate patients and caregivers about conditions' "red flags," coach patients in self-management techniques, and monitor medication adherence. Caseloads are kept at appropriate levels, based on the complexity of the case mix.