APPENDIX E

ANNOTATED BIBLIOGRAPHY

Literature Related to Quality Improvement and Chronic Illness Management for Frail Elders by Category

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The bibliography is not meant to be exhaustive but to highlight seminal work on major topics relevant to understanding the context in which the Program for Elders in Managed Care was designed and how its findings today will be applied. The annotations reflect a “read” of the major relevant points of each article. The text however draws at times on the language used by the individual article authors in making some of those points.
KEY POINTS

1. It is important to address the way in which care is managed for frail elders because such individuals account for a large share of the nation’s health care costs, and much of their need lies in care for chronic illness, which may not be adequately addressed by our health care system as it is focused on treatment of acute conditions and service-by-service payment (Anderson and Knickman 2001; Partnership for Solutions 2002).

2. PEMC was developed from 1996 through mid-1997. By this point in time, Wagner, Austin, and Von Korff (1996) had already started to publish on the need for improving care for chronic illness. They argued that there were five components to high-quality chronic care: (1) evidence-based planning based on explicit care plans and protocols; (2) redesigned practice to meet the needs of patients who require more time, a broad array of resources, and closer follow-up; (3) patient education with specific attention to the information and behavioral needs of patients (self-management, behavior change, psychosocial support, patient participation; (4) ready access to expertise (such as provider education, decision support, consultation); and (5) supportive information systems (reminders, outcomes, feedback, care planning).^{2}

3. However, research on the activity underway during the PEMC development period indicated that many proposed innovative programs were fairly cautious experiments that tended to focus on one of four interrelated strategies: targeting high risk seniors, using teams to provide care, shifting the site of care, and redesigning primarily care (Boult, Kane, Pacala, and Wagner 1999). The authors speculate that an absence of further investments in this area occurs because innovation is expensive and the return of investment is uncertain, innovations are hampered by regulatory requirements and payer restrictions, financial support for innovation is in competition with other demands for capital, and the potential support for innovation is limited by the “collective denial of the industry who prefers to believe the solution lies in finding more money for Medicare.” More recent research suggests that many of the weaknesses in the care system then still exist today (Casolino, et al. 2003).

4. The “science” of how to improve care for frail elders seems to have become more developed, at least from an intervention research perspective, since the mid- to late 1990s. When Boult, Boult, and Pacala (1998) reviewed the literature at that time on evidence of care improvement for older adults with chronic illness, they found that most of it focused either on what appear to be narrowly defined interventions targeted by setting or on single interventions, with limited evidence of effectiveness to support decision making.

5. Since that time, there seems to be growing consensus (at least among those publishing) that improvements in care for chronic illness (of which frail elders have

^{2} The current model has been refined and focuses on five essential elements of care: (1) self-management support; (2) clinical information systems; (3) delivery system redesign (around teams); (3) decision support (reminders, feedback, registries); (4) health care organization; and (5) community resources. (Bodenheimer, Wagner and Grumbach 2002).
many) tend to require more systemic interventions. Given support from the Robert Wood Johnson Foundation, the Wagner model of altering care delivery has become more accepted. Though Chen, Brown, and others (2000) distinguish between two types of best practices in coordinated care (disease management of single conditions and case management programs targeting “high risk” people), they conclude that success in both kinds of programs requires a three-step model involving a written plan of care; an established and ongoing care coordinator-patient relationship and excellent provider education; and periodic assessment. Single-disease programs differ from more general programs insofar as the former have greater access to a standardized set of evidence-based guidelines.

6. Though formal meta-analyses of randomized control trials exist (for example, Cochrane collaboratives such as by Gillespie, et al. 2003) as do less formal syntheses of research (for example, Reuben 2002), those seeking quality improvements have been discouraged both by the slow pace of change and constraints on these studies, which take a long time, may not be generalizable to diverse settings, and can be expensive, especially given the range and diversity of care needs associated with chronic care. Under the leadership of Berwick (1989), there has been more focus on continuous quality improvement. The basic model is to “plan, do, study and act,” or “PDSA,” as a way of generating thoughtful change in response to complex problems in equally complex organizations (Berwick 1998; Kilo, et al. 1998). Those actively engaged in applying the chronic care model have built on the concept of “breakthroughs” using structured, collaborative processes for rapid-cycle change (Wagner, et al. 2001). Such approaches generate less sophisticated research, but their proponents argue that they are more effective and that initial results show promise in terms of improvements in care delivery (Wagner, et al. 2001b; McCulloch, et al. 2000; IHI 2004). Evidence of cost savings is more mixed (Chen, Brown, et al. 2000), and evidence strongest for selected interventions targeted to such conditions as congestive heart failure, asthma, or diabetes (Bodenheimer, et al. 2002).

7. Knowledge of the factors that influence success or failure is growing. Strong leadership that champions change is important to success (Ruben 2002; Bodenheimer, Wagner, and Grumbach 2002) and required for participation in the collaboratives with Improving Chronic Illness Care (ICIC) and the Institute for Healthcare Improvement (IHI). Involvement of physicians has long been viewed as essential (Berwick 1989), and primary care is viewed as key. But the need to reorient practice from acute to chronic care and from individual to team-based processes, in addition to the need to support self-management can be challenging. In addition to culture and system change, limitations in clinical information systems needed to support change often exist, and it may be difficult to develop more useful systems in small practices (Bodenheimer, Wanger, and Grumbach 2002). Yet, attention to all these dimensions of care is important. Programs with well-developed improvements in processes have been more likely to generate improvements than others, whether for disease-specific care or case management (Chen, Brown, et al. 2000). In addition, the potential for “falling through the cracks” is greater when individuals have complex care needs that require transitions from one place to another (Coleman 2003). Partnerships with community agencies are important to addressing such needs, and despite the many barriers to such arrangements, the potential for collaboration is also present (HMO Workgroup 1999).
8. The business case for improving care may often be unproven or even absent, making it more difficult to generate support (Bodenheimer, Wagner, and Grumbach 2002). Further, all agree that benefit design, payment policy, and misaligned incentives are major barriers to improving care. This applies even in the acute care system, and such barriers are even more constraining in treating nonmedical needs and conditions requiring long-term care services (Thornton, et al. 2002). The fact that HMOs focused on care management, albeit for medical care covered by insurance, when they were growing in the late 1990s (HMO Workgroup 2002) reflects both the incentives of capitation (versus per-service payment) and the interest among those aiming to strengthen their organized care systems.

9. Attention to improvements in care for the chronically ill in general and for frail elders in particular is likely to grow even stronger in the years ahead. The Institute of Medicine (IOM) listed care coordination as one of two cross-cutting priority areas for national action aimed at transform the health care system (IOM 2003a). Many of the specific priorities it recommended also involve frail elders directly (frailty as a priority) or conditions common to them (for example, diabetes, ischemic heart disease, major depression). The IOM has both identified chronic care demonstrations as important in broader health systems reform and recommended a start with Medicare (IOM 2003b). The Medicare Modernization Act (MMA) of 2003 includes a number of provisions designed to encourage improvements in chronic care for Medicare beneficiaries, including programs for quality improvement in this area for private health plans and the traditional program along with demonstrations to identify factors that encourage improvement and further research on this topic (Alliance of Community Health Plans 2003).

10. Care for frail elders draws heavily on care needs related to chronic illness and disability. While interventions distinct from single-disease management, frail elders have chronic conditions that benefit from management, so it is relevant to place the two types of interventions and bodies of research in the same context.

**TOPICS COVERED**

1. Continuous Quality Improvement Concept
2. Chronic Care Needs and Why they Are Important
3. The Chronic Care Model (CCM)
4. Other Proposals for Improvement (May Relate to CCM)
5. Empirical Studies of Chronic Care Management Nationwide
6. Outcomes of Efforts to Improve Chronic Care
7. Opportunities and Context for Future Demonstrations and Improvements
8. Older or More Specialized Articles
1. Continuous Quality Improvement Concept


In this classic piece, Berwick distinguishes between the use of inspection (theory of bad apples) and the theory of continuous quality improvement (CQI) to enhance quality of care. He argues that inspection relies on measurement that is highly sensitivity and specific but never robust enough to avoid gaming. Inspection also assumes that problems of quality are caused by poor intentions, so blame must be assigned. In contrast, CQI focuses on learning and improvements for the average case, not the outlier. For CQI to occur, leaders must encourage it, investments must be substantial, respect for workers must be reestablished, open dialogue must be carefully maintained between customers and suppliers, existing tools must be used in health care settings, institutions must be organized for quality, health care regulators must become more sensitive to the cost and ineffectiveness of inspection, and professionals must take part but avoid minimalist “standards” of care. Individual physicians also must get involved.


In this article, Berwick presents the rationale for generating care improvements by conducting small, local tests (Plan, Do, Study, Act—or PDSA) versus randomized design or by making changes without reflection or evaluation. He argues that the former approach is best in a setting in which there is neither certainty nor scientific ignorance, which would justify the latter two approaches. Though PDSA seems simple, Berwick argues that it is a sophisticated and demanding way to achieve learning and change in complex systems. PDSA, he says, “is most helpful when inaction seems inappropriate but action without reflection seems unwise.” Randomized controlled trials (RCT) are good for “final inspection” of a well-crafted, unitary change but are less appropriate when trying to develop a sound change to test formally or to adopt a proven treatment to a local setting with its own conditions. RCT also take a lot of time. Though policymakers aim for the “home run” or single, once-and-for-all change to solve a problem, numerous small cycles of change accumulate into large effects through synergy. PDSA requires both system-level and process-level measurement but can be challenging for physicians who feel the methods are not rigorous enough and also may perceive “failure” of a test as a loss versus a success (“a test is a change with a safety net under it”). PDSA takes investment of time and money, with “study” being the most vulnerable step. Physicians have to learn to accept and value small-scale change, as the alternative would be worse.


This article describes the Institute for Healthcare Improvement’s collaborative improvement model called the Breakthrough Series (BTS), which was first created in 1995 and updated continually since then. BTS aims to achieve “unprecedented” levels of improved performance in participating organizations in under a year by bringing providers together to understand and drive improvements in their topic areas. Six premises underlie BTS: (1) a substantial gap exists between knowledge and practice in health care; (2) broad variation in practice is pervasive; (3)
Examples of improved practices and outcomes exist, but they need to be described and disseminated to other organizations; (4) collaboration between professionals working toward clear aims enables improvements; (5) health care outcomes are the results of processes (that is, systems are important); and (6) understanding the science of rapid-cycle improvement can accelerate demonstrable improvement. BTS methods treat improvement as part of a work process, not a separate function, and rapid, measurable, sustainable improvements in the areas of focus are seen as building internal capacity. The focus is on high-leverage ideas for change. Some 20 to 40 organizations work for 9 to 12 months in three two-day learning sessions. So far, 367 teams of 256 organizations have participated in 11 collaboratives.

Applicants must show senior leadership support, demonstrate commitment, and contribute to the financial requirements of the collaborative. Change should not be seen as an added burden but as an essential part of work. The three core roles are system leader, technical expert, and day-to-day leader. Four criteria are used to define topics: (1) eliminating a gap in knowledge and practice can improve quality; (2) models of high level performance already exist; (3) significant financial savings are likely; and (4) a national leader is available to chair collaborative. The model involves PDSA and uses small-scale tests before final implementation. “Just enough” data used rigorously determine improvements. Focus is encouraged by both limiting handouts to critical information and using a one-page report format. Tension is used to create constructive peer pressure to change via senior leadership support, shared deadlines, and ongoing assessment of process. IHI focuses on knowledge dissemination within and external to organizations, with a public report at the end placing knowledge in the public domain.


IHI says “The driving vision behind the Breakthrough Series is this: Sound science exists on the basis of which the costs and outcomes of current health care practices can be greatly improved, but much of this science lies fallow and unused in daily work. There is a gap between what we know and what we do.” The BTS helps organizations close the gap. The Breakthrough Collaborative is a short-term (six- to fifteen-month) learning system with teams for hospitals or clinics (12 to 160 participating organizations), though the Web references 20 to 40 organizations for six to eight months, so this is probably most typical. Since 1995, 50 collaboratives involving 2,000 teams for 1,000 health care organizations have been formed to address several dozen topics. Teams typically send three members to three face-to-face meetings, with additional members working locally. The Web site indicates that these collaboratives have reduced waiting time by 50 percent, worker absenteeism by 25 percent, ICU costs by 25 percent, and hospitalizations for patients with congestive heart failure by 50 percent. In fall 2003, operational collaboratives were focusing on improving critical care, improving flow through acute care settings, and improving patient safety (each spanned October 2003 to July 2004). IHI develops improvement guides at the end of each collaborative with explanations, tips, and step-by-step instructions on how to improve specific clinical or operational areas. A Breakthrough Series College is also offered.

Drawing on its methods and those of ICIC (the chronic care model), IHI also has Bureau of Primary Health Care support for the health disparities collaboratives. These arrangements involve community health centers (350 so far) and have focused on diabetes, asthma, depression,
and cardiovascular disease. Future collaboratives are planned around these same topics and new ones including cancer, prevention, and infant mortality. The goal of the overall initiative is to involve all 750 federally funded health centers and 4,000 primary care practice sites in a collaborative learning experience to reduce racial disparities in health care by the year 2005. The second phase, which has begun, aims to expand this improvement work to the entire health care network.

2. Chronic Care Needs and Why Improvements Are Important


This article presents national data from Medical Expenditure Panel Survey (MEPS) for 1996 on the incidence of individuals with chronic illness, disability, and/or functional limitation and the resulting costs. It discusses ways in which the system is not organized to meet individuals’ needs. Barriers include clinical information systems that do not permit clinicians to see what others are doing; insurance coverage that may be inadequate or expensive or limit care only when improvement is occurring versus slowing the progression of disease or maintaining mobility; payment that focuses on episodes and excludes ongoing care and counseling; and episodic care that ignores comorbid conditions and the need for coordination. Long-term care services are considered social rather than medical, not covered by insurance except when one is poor and their existence is not well known, leading to low or late use and reliance on informal sources of care. Other problems include return-to-work incentives, financial incentives to shift funding to other sources, financing that varies provider treatment incentives by source of funding, lack of payment for coordination, and a medical culture organized around episodes of care.


Funded by the Department of Health and Human Services (HHS), this report builds on the Institute of Medicine’s Quality Chasm report recommendations for developing and applying criteria based on a process that generates a list of 15 to 20 candidate priority areas for attention to help the nation move toward developing higher-quality care. IOM recommends that conditions cover the life span to help with staying healthy, getting better, living with illness and disability, and coping with the end of life—including cross-cutting systems intervention relevant to all four. Particular candidates were identified in accordance with impact (burden of a condition), improvability (size of gap between evidence and current practice), and inclusiveness (relevance to broad spectrum of population). Care coordination is listed first as one of two cross-cutting priorities along with self-management/health literacy. Other priorities heavily reflect chronic conditions. Frailty associated with old age, among with many diagnostic-specific conditions such as diabetes, ischemic heart disease, and major depression, is identified as a priority.
3. The Chronic Care Model

_Bodenheimer, Thomas, Edward H. Wagner, and Kevin Grumbach. “Improving Primary Care for Patients with Chronic Illness.” JAMA 288(14): 1775-1914, October 9, 2002._

This two-part article follows an initial article in the series Innovations in Primary Care that highlighted the inadequate treatment of chronic disease in primary care practice that is subject to the “tyranny of the urgent.” The authors argue for a chronic care model in primary care practice that includes six essential elements: self-management support, clinical information systems, delivery system redesign (around teams for chronic care), decision support (reminders, feedback, registries), health care organization, and community resources. The paper presents case studies of four diverse settings where elements of the model are in place (Premier Health Partners with its network of private practices; HealthPartners Medical Group and Kaiser-Permanente Northern California, each of which is an integrated delivery system; and Clinica Campesia, a community health center participating in Health Resources and Services Administration’s (HRSA) diabetes collaborative with Improving Chronic Illness Care and the Institute for Healthcare Improvement.


This article reviews research on whether the Chronic Care Model improves management of chronic illness and reduces health care costs. Building on a recent Cochrane review of such programs, the findings on improved management focus on diabetes. The article classified ambulatory diabetes management programs by their use of model components. Thirty-two of 398 studies involving interventions with at least one model component had at least one improved process or outcome measure for diabetic patients. No particular component or combination emerged as essential. Cost studies were limited, but 18 of 27 involving congestive heart failure, asthma, or diabetes evidenced some reduction in cost or lower use of services. The authors conclude that extensive implementation of the business model will require a business case but note that the business assessment varies with condition, type of organization, and mode of reimbursement. They argue that implementation will require visionary clinical leadership and a financial environment that either helps leaders implement change or at least does not hinder them from initiating change. Additional obstacles to provider groups stem from the expense and difficulty of reconfiguring care and of developing appropriate clinical information systems, just to name a few. However, the authors argue that some elements of the model are easy to implement in any primary care practice but that ultimately a major redesign of medical practice will be required.


The article presents findings on using the Chronic Care Model to enhance system supports for chronic care and clinical outlines for diabetes and cardiovascular disease in nine community-based primary care practices from the Practice Partner Research Network. Outcomes improved as system support increased, with provider decision support most important.
This paper argues that there are major deficiencies in the delivery of both chronic care and clinical preventive care. Given that both types of care are a major part of primary care physician practice, it could make sense to think of them together. The two share many commonalities, including the need for community resources and a focus on defined populations based on ongoing planned care involving complex and multifaceted tasks that could benefit from decision guides. In both cases, providers are inadequately trained for their role while policymakers fear that services will not be cost-effective. Chronic care and preventive care do differ in that providers may be less receptive to the latter because it is not curative and may not involve the team; the time frames for return on investment vary as well, and fewer specialists are involved. The paper reviews the main elements of the Chronic Care Model—system organization, clinical information, delivery system design, decision support, self-management, and community resources—and finds them relevant to prevention as well. Authors validate the components by looking at survey of “best practice:” prevention programs involving mammography screening, smoking cessation, and community health centers. They conclude that the similarities between the two types of care are greater than the differences, with the Chronic Care Model framework congruent with other models of conceptualizing preventive care. The use of community resources is particularly important in prevention, and there is merit in relying on a single framework for both.

This article describes the Chronic Care Model that aims to improve quality of care for people with chronic conditions. The authors cite recent Institute of Medicine work on the quality gap, concluding that the health care system is organized to treat acute illness or injury and thus is not structured to help translate improvements in chronic care management into delivery. They note, “Trying harder will not work. Changing systems of care will.” Development of the CCM was funded by the Robert Wood Johnson Foundation, which then funded work to apply and extend the model. The Improving Chronic Illness Care program has three parts: (1) quality improvement evaluation using the Breakthrough Series run by Institute of Healthcare Improvement; (2) a dissemination program of technical assistance and support for interested organizations; and (3) research grants to address specific questions in chronic care management. The goal is to involve in collaborative activity large numbers of diverse health care delivery organizations. Several of the IOM rules for creating higher-quality health systems in the quality chasm report are relevant to chronic care, especially continuous relationships with the health care team, individualization of care by patient need and values, care that anticipates patients needs, services based on evidence, and cooperation with clinicians.

With IHI, the ICIC program has conducted national BTS chronic care evaluations involving 104 health care organizations in 12 or 13 programs. The BTS focus on a single condition with an improvement plan was piloted to evaluate 100 to 500 patients with that condition and their caregiver. To assess progress they collected data regularly and submit monthly reports. The first BTS involved 26 organizations working on diabetes and 6 on frailty. The second involved 16
organizations working on congestive heart failure and 10 on diabetes care, and the third involved 24 organizations working on asthma and another 23 on depression. Half of the BTS evaluations operated under the Health Resources and Services Administration’s Bureau of Primary Health Care; the others operated under managed care, academic practice, hospital systems, and other auspices.

Experience is useful in reexamining the six CCM elements. Within health care organizations, leadership proved pivotal, and the elimination of financial disincentives may be at least as important as adding incentives; further, rapid cycle change may be better than traditional improvement strategies. More attention could focus on self-management, which is relatively new. In terms of decision support, guidelines need to be woven into systems to make a difference, and training in relevant skills is essential, though skill level remains a barrier in most systems. Reimbursement policies and the behavior of health plans and insurers were most often noted as critical in accelerating or obstructing change, with payments limited to some modalities and many patients served by several systems with different processes.


This paper argues that, with the health care system’s focus on responding to patients’ acute and urgent needs, providers have long neglected integrated patient-centered care for chronic illness. Such a focus leads to delays in detecting complications or declines in health while assessments are irregular or incomplete and follow-up may be inadequate. Failures in self-management of illness occur because patients are passive or ignorant owing to inconsistent assessments inadequate patient education and motivation, and limited physician feedback. The omission of effective interventions and/or the delivery of inadequate care compromises quality of care. Psychosocial stress also may go undetected or inadequately managed. The paper argues that the five components of high-quality chronic are (1) evidenced-based planning of care based on explicit plans and protocols; (2) redesigned practice to meet the needs of patients who require more time, a broad array of resources, and closer follow-up; (3) patient education that focuses on patients’ specific information and behavioral needs (for example, self-management, behavior change, psychosocial support, patient participation; effective programs include collaborative problem definition, targeted goal setting and planning, a continuum of self-management training and support services, and active and sustained follow-up); (4) ready access to expertise (for example, provider education, decision support, consultation); and (5) supportive information systems (reminders, outcomes, feedback, care planning). Barriers to high-quality chronic illness care include organization of care solely around the visit, inadequate training in skills needed to manage chronic illness, and lack of incentives to reward providers for comprehensive assessment, counseling, education on self-management, and so forth. If primary care ignores chronic illness care, it will be left to deal only with primary prevention and acute illness.


This article describes the Breakthrough Series coupled with chronic care focused on diabetes in 26 health care organizations. The organizations participated for the 13 months between August 1998 and October 1999. The approach combined the Chronic Care Model with rapid-
cycle improvement and evidence-based content and included three two-day learning sessions alternating with action periods. Teams identified a moderately sized subset of practices for pilot sites and selected all relevant patients in those practices (recommended n= 50 to 150). The teams submitted monthly reports to describe progress, and the BTS culminated in a national congress. The collaborative included two conditions to emphasize the commonalities of good chronic illness care. Each team was charged $12,500 registration for BTS, with participants encouraged to involve at least three people. (The article provides considerable detail on the activity.) Twenty-three of the 26 organizations working on diabetes completed implementation. The chart review and self-report data show improvements. Many of those evidencing the greatest improvements were community health centers, which had the fewest resources. Data on whether sites moved beyond the pilots are lacking. Visible leadership proved highly important. Additional collaboratives are being mounted.

4. Other Proposals for Improvement (may be congruent with or related to CCM)


This paper addresses the transitional care needs of people with complex needs, with such care defined as “a set of actions designed to ensure the coordination and continuity of health care as patients transfer between different locations or different levels of care within the same location.” People with continuing complex needs often require care in several settings, thereby heightening their vulnerability. Systems of care often fail to ensure that the essential elements of a patient’s care plan developed in one setting are communicated to the next setting, that the necessary steps for transfer are properly carried out, that information is communicated, and so forth. Such transitions have received limited attention because associated financial incentives are nonexistent, Moreover, Medicare payment is related to setting, quality assurance focuses on setting, and quality indicators for assessing performance in transitions are limited. Given that transitions threaten harm as well as offer opportunities for gains, the authors argue for careful consideration of the proper balance.

Components of effective care transitions include: (1) communications between the sending and receiving clinician (for example, care plan, summary of care from sending institutions, patient’s goals and preferences, advance directives, updated problem list, status, medications and allergies, and contact information); (2) preparation of the patient and caregiver for what to expect at the next care site; (3) reconciliation of the patient’s medications with the current regimen before the initial transfer; (4) follow-up on how outstanding tests and follow-up appointments will be completed; and (5) an explicit discussion with the patient and caregiver about warning symptoms, signs to monitor, and whom to contact if signs and symptoms occur. Barriers to achieving effective transitions exist at the delivery system level (separate settings without formal relationship and lack of financial incentives, quality indicators, information systems); the clinical level (institution-based physicians, nursing shortages, assignment of care managers to settings versus longitudinal practice); and patient level (limited advocacy in advance, patient limitations in self-management). Despite the development of various models specifying ways to address barriers, both policy change and more research are needed.
This report comes from a work group whose participants represent health plans and group practices capitated for a significant portion of their revenue. As the seventh in a series, the report recommends that managed care organizations (MCOs): (1) conduct periodic screenings and assessments for common geriatric conditions and put in place effective interventions for positively identifying older members; (2) ensure that primary care practitioners have the tools, incentives, and resources to facilitate identification and appropriate management of older members with common geriatric conditions; (3) establish partnerships with community agencies that provide complementary services for older members with common geriatric conditions; (4) recognize that geriatric conditions often confound treatment of other chronic illnesses; and (5) remain receptive to innovations that are not currently part of MCOs’ benefit structure but may have a favorable impact on quality of life for older members. The report focuses on seven treatable conditions, including physical inactivity, falls, medication-related complications, dementia, depression, undernutrition, and urinary incontinence. The work group envisions a partnership among the MCO, primary care practitioner, and member to address these conditions. MCOs can also encourage members to be active on their own behalf. The report is meant to provide an evidence-based demonstration of what MCOs could do, noting that many interventions do not require substantial resources.

Prepared by a group of health plans and group practices capitated by health plans for a significant portion of their revenue, this report is the fourth in a series and focuses on ways to improve the delivery of care to Medicare beneficiaries. It aims to show how MCOs can break out of the pure medical model to promote and establish linkages with community-based social services agencies, referred to as community resource organizations (CROs). CROs include area agencies on aging, county/city social service agencies, United Way, houses of worship and religious organizations, local chapters of disease-specific associations, YMCA/YWCA, hospital-based outreach and wellness programs, cooperative extension services providing nutritional information, and community senior centers. The report notes that MCOs and CROs must understand each other’s limitations. CROs need to acknowledge that MCOs generally are not paid to deliver social services, and MCOs need to acknowledge the budgetary constraints of MCOs. Yet, expanding beneficiary access to community services is important for MCOs, and some studies show that access to social services can lower patients’ use of medical care not by substituting one form of care for another but rather by maintaining activity and function. The report describes ways of relating to patients at two levels—the individual level (for example, a case manager) and the organizational level (formal relations between the two levels to help identify those who need assistance and to help them access appropriate services). The report notes that MCOs need to maintain an up-to-date inventory of community services and, in doing so, can effectively identify the range of assistance available from community organizations or consultants. In fact, to help physicians, family caregivers, discharge planners, and health educators become knowledgeable of available referral sources, MCOs can screen members to identify those in need of assistance. Given the limitations of CROs, MCOs may want to
supplement high-demand CRO services by selectively internalizing some services (friendly visiting services or peer counseling support groups for those with specific chronic conditions or those grieving). Volunteers can be enlisted to help and to telephone socially isolated seniors or those with chronic conditions. While most MCOs do not pay for CRO services, payment may be advisable so that patients value the service, thereby generating some revenue for the CRO. Aligning incentives is one of several important functions of MCOs. “Overcoming organizational and disciplinary boundaries between MCOS and CROs is critical to patient well being.”


This report provides a chartbook that seeks to enhance understanding of the demographic characteristics and prevalence of people with chronic conditions and multiple conditions. It examines why treating these conditions strains the health care system and discusses implications for individuals and their caregivers. The report shows that the number of people with chronic conditions is increasing and that multiple conditions are common and often limit activity. Individuals with chronic conditions account for 78 percent of all medical spending and represent the heaviest users of care. The report reviews the impact of multiple chronic conditions on patients (lack of adequate information, multiple providers, difficulty in gaining access to care, high out-of-pocket spending, and difficulty in paying for care). Physicians report difficulty in coordinating care and believe that such difficulty results in unmet needs and poor outcomes. Family caregivers play a large role but face competing demands. The report calls for a new model of care that includes: (1) rethinking financial reimbursement and incentives; (2) developing better connections between supportive and clinical care delivery systems; and (3) examining the training of providers to prepare them more fully for the changing realities of medical practice.

5. Empirical Studies of the State of Chronic Care Management Nationwide

Boul t, Chad, Robert L. Kane, James T. Pacala, and Edward H. Wagner. “Innovative Healthcare for Chronically Ill Older Persons: Results of a National Survey.” The American Journal of Managed Care 5(9): 1162-1172, September 1999.

This article reviews innovative health care programs for chronically ill older adults. It responds to the growing importance of chronic illness among the elderly and discusses changes in care financing as capitation expands, noting that such changes could serve as a platform for improving care delivery. The study summarized in the paper aimed to identify and characterize the most innovative (operational) programs serving older adults. The authors asked well-informed national leaders to identify candidate programs and then selected 31 of 48 named programs. (The 14 eliminated were not yet field tested (8), not sufficiently innovative (2), not focused on health care versus social support (4), or not willing to participate in interviews (3).) Half of the 31 were sponsored by provider organizations and half by HMOs. Twelve of the 31 focused on case management; the others focused on long-term care (5), primary care (4), integrated services (3), or something else (7 total, including 2 each in subacute care, end-of-life care, and data management and 1 in self-management). Of the 12 in case management, 10 were funded internally; many used a screening instrument and required that case managers have a nursing background (some used social workers). Despite the introduction of innovations, none of
the programs showed much evidence of collaboration between case managers and primary care physicians, and studies of outcomes were not available or were still in process.

The authors conclude that the most integrated of the programs demonstrated the potential to provide exemplary care but that, on an individual basis, most programs were engaged in “fairly cautious experiments to test the waters.” Despite their diversity, the programs intended to include one of four interrelated strategies—targeting high-risk seniors, using teams to provide care, shifting the site of care, and redesigning primary care. The authors speculate that program investments in integration are minimal because innovation is expensive and consensus on the ways to generate returns on investment is limited. Further, several factors impede innovation, including regulatory requirements, payer restrictions, competing demands for capital, short-term fiduciary concerns, and the health care industry’s collective belief that the solution lies in finding more money for Medicare. The authors say that the fact that case management is the most widely implemented innovation is not surprising as the cost of a few paid case managers remains relatively modest. Lack of rigorous evaluation also limits what can be learned.


The authors conducted a national survey of a census of medical groups and independent associations with 20 or more physicians to assess the extent of use of organized care management processes (CMPs). The authors based their calculation of CMP scores on the use of case management, physician feedback, a disease registry, clinical practice guidelines, and self-management skills for four conditions: asthma, congestive heart failure (CHF), depression, and diabetes. Of a possible score of 16, the mean use was 5.1, with 50 percent using four or more CMPs. External incentives and clinical information technology (IT) were most strongly correlated with use. The authors concluded that use of CMPs varies but is low on average and that government and private purchasers might want to encourage greater use by providing external incentives and assistance to improve IT capability.

6. Outcomes of Efforts to Improve Chronic Care Management


This article presents 12-month results of a randomized control trial of a partnership between Kaiser Permanente Ohio and the Cleveland Area Alzheimer’s Association (AA). The intervention added care consultation from AA to the usual managed care services offered by Kaiser. Care consultants are master’s-level licensed social workers who initiate contacts with patients and family caregivers per the standard protocol for service delivery, including assessment, problem identification, and the development of strategies as the basis of an individualized care plan with regular follow-up and monitoring. Those in the nonintervention group may access AA services other than care consultation. After 12 months, the results showed no statistically significant effects of the intervention on ER visits, hospital admissions, or physician visits, but the intervention group used fewer nonassociation support services and was
less likely to have a Kaiser manager. In addition, caregiver satisfaction increased and depression decreased, and, among nonspouse caregivers, the intervention led to decreases in relationship strain. The authors conclude that the intervention could be a promising strategy, though they note the limits of the study and analysis.


This article reviews early outcomes of organizations seeking to improve care for elders. The paper was motivated by the fact that only 10 to 20 percent of older persons have chronic conditions that frequently require intensive and expensive care and that 5 to 10 percent consistently incur 60 to 70 percent of the older population’s health care expenses. The review covered innovations focused on the care of older adults with acute conditions (acute care hospital units for elders, home hospitalization, and subacute care units), on the care of higher-risk older adults (screening programs, geriatric evaluation and management, case management, interdisciplinary home care, proactive primary care, adult day health care), and the care of low-risk older adults (prevention, advance directives, and so forth). The authors conclude that the data on effectiveness are of limited use in the support of decision making, with data most supportive of implementation of in-home assessment and follow-up by nurses, interdisciplinary home care, and case management for congestive heart failure. (A randomized trial of unstructured case management found increased hospital use and no improvement in quality of life.) The authors note that trends in program implementation reflect executives’ vision of their mission and that special programs for high-risk older people require developing infrastructure included information, primary care providers skilled in geriatrics, integration so people do not fall through the cracks, and incentives to encourage care. Realignment will be challenging.


This article reviews the results of a one-year randomized controlled trial of case management in several San Francisco sites. The authors place the study in the context of historical research on case management programs that target older people at highest risk for poor outcomes or high care costs, noting that such programs typically yield client satisfaction but cost more than they save (for example, the national Long-Term-Care Channeling Demonstration). New studies that take advantage of targeting claim better results, but the designs proved weak and the results inconsistent. This study, with the Brown and Toland Medical Group that shares financial risk from six HMOs with its associated hospital, randomized practices and involved a joint intervention with the Jewish Family and Children’s Services’ Seniors-at-Home (SAH) Division. In the first half of 1995, at least one member of the office staff was trained in each site to refer to SAH. Referrals also could be made through two other routes. The SAH social worker visited each home for an evaluation. Through the visits and telephone contacts, the manager arranged and coordinated needed services such as home care, transportation, meals, rehabilitative therapy, bill-paying services, and financial assistance. The evaluation measured resource use for the entire population randomized to treatment and control groups. The former used more case management services at a slightly lower total payment ($3,148 versus $3,277) that was not statistically significant. Researchers call for studies of more outcomes and of alternative types of case management. The latter should include: (1) specific protocols to identify those appropriate
for case management; (2) evidence-based, algorithm-driven, and time-limited care for defined sets of conditions and (3) close communication and more effective collaboration between case managers and primary care physicians.


This report provides a targeted analysis of best practices in coordinated care to assist in designing a Medicare demonstration program for the traditional Medicare program. The authors sought out successful candidate models of coordinated care, aimed to collect sufficient information for a consistent evaluation of model success, and then subsampled a set of models to identify the reasons their success.

Using a variety of techniques, the authors identified 384 candidate programs and obtained sufficient information on 157 to assess their success. For the purpose of this study, the authors judged success on two criteria: first, a program had to generate savings in hospital admissions or costs or demonstrate other indicators of reductions in medical costs; without such a reduction, the program would be unlikely to offset its own costs, a criterion the authors assumed would be important to Medicare. Second, a program had to be operational with relatively recent experience (for example, past 10 years), focus on chronic, systematic disease in adults (19 and over and excluding pregnancy), and provide care coordination as defined by the authors. The steps associated with programs include initial assessment and care planning, implementation and delivery (including service arrangements focused on overall plans for care, patient education, involvement of primary care physicians, and involvement of other providers), and reassessment and adjustment. Of the 157 programs assessed on these dimensions, 67 met both sets of criteria, and 90 did not. Of the 90, 31 failed the test of availability of data on impact on hospital use/cost, and 36 others lacked data on these or other outcomes. Successful programs were grouped by performance on both dimensions, with 25 selected at random for further study within groups and high-process programs with large to medium interventions sampled disproportionately.

Successful programs were of two main types and operated under a variety of sponsors. The first type included case management programs that targeted “high-risk patients” with diverse combinations of health, function, and social programs. The second type included disease management programs that targeted patients whose main health problem was a single condition with a relatively standard set of needs related to it. The latter program type tended to be more standardized, though both types involved the same three steps and generally built on existing primary care physician relationships with a proactive focus on prevention. In contrast, a few of the programs with zero impact evidenced less developed processes. The authors conclude that incremental approaches to improving chronic care can generate savings.

The authors recommend five features from the demonstration to encourage success: (1) programs should follow the three-step model, with step one required to complete a written plan of care; step two required to identify an established ongoing care coordinator, forge a patient relationship, and provide high-quality patient education; and step three required to undertake periodic reassessment; (2) programs should set forth express goals of prevention with a proactive orientation; (3) disease-specific programs should incorporate national evidence-based or consensus-based guidelines into the intervention; (4) care should be coordinated by nurses with...
at least a bachelor’s degree in nursing; and (5) programs should have significant experience in care coordination and should demonstrate evidence of reduced hospital use or total costs.


This article provides results of a randomized control trial of a new model of primary care (chronic care clinics) to improve outcomes of common geriatric syndromes (urinary incontinence, falls, depressive symptoms, high-risk medications, functional impairments) in frail older adults. The setting was a six-physician practice in a single ambulatory care clinic at Group Health Cooperative Northwest that voluntarily decided to focus on frail elders (another five clinics focused on diabetes). The intervention took the form of a half-day chronic care clinic every three to four months. Services included an extended visit with a physician and nurse to undertake necessary planning, a pharmacy visit, and a patient self-management/support group. After 24 months, the practice saw no significant patient improvement, though patients were highly satisfied with the clinics. The authors stress that power was limited because the intervention was based on nine physicians within practices in a single clinic and that power was limited. Further, that only one clinic chose to focus on frail elders is significant in itself. The authors conclude that a concentration on practice redesign cannot by itself be effective in the absence of comprehensive system change, including integrated information systems, clinical parameters, institutionally endorsed practice guidelines, available collaborative expertise in geriatrics, and coordination across sites of care.


This meta-analysis examines research on interventions for preventing falls in elderly people. The review includes 62 trials with various participants and interventions in a variety of settings, although most trials involved older adults based on age or residence or because of a recent fall. Seventy-one percent of participants represented two categories of intervention: exercise or physical therapy intervention (23 trials) and multidisciplinary, multifactorial risk factor screening and intervention (21 trials). Studies show that, even among fallers, risk reductions are small. Interventions targeting multiple risk factors are marginally effective, but so are targeted exercise interventions, home hazard modifications, and reducing psychotropic medication. Where important individual fall risk factors can be corrected, focused interventions may be more clearly effective (for example, cardiac pacing for demonstrated carotid sinus hypersensitivity, but this intervention is appropriate to only very small share of falls). The research notes specific interventions with evidence of effectiveness, lack of effectiveness, or unknown effectiveness.


This article focuses on self-management support in one of six areas included in evidence-based interventions to improve processes of care and patient outcome for those with chronic
illness. Self-management is central to the Chronic Care Model because of the importance of informed, activated patients in ensuring productive patient-provider interactions that yield successful outcomes. The article is based on the second chronic illness collaborative, which focused on diabetes and heart failure. The collaborative included self-management content in both its preliminary sessions and breakout modules. The self-management training model addressed collaborative goal setting that yields a personal action plan. The plan, in turn, reflects individually tailored strategies and problem-solving techniques that take into account personal barriers and an assessment of self-management beliefs, behavior, and knowledge. The article highlights frequent and innovative self-management activities for diabetes and heart disease. Improvements related to heart failure may have required fewer changes in provider beliefs and fewer system changes than those for diabetes, though perhaps not. Self-management led to significant improvements in outcomes for heart failure; improvements for diabetes were positive but not significant. Safety net systems were participants with improvements. Researchers identified four factors believed to be associated with effective self-management: (1) use of processes for helping patients that parallel those used for system improvements; (2) support from physician leaders; (3) models or approaches that were practical, relatively brief, and easy to integrate into a variety of settings; and (4) mutual sharing not just from experts but also from peers. Researchers also noted their impression that the most successful teams changed their world view on self-management, did not debate endlessly but rather instituted changes, identified specific staff responsible for change, and integrated self-management components into other components of change.


This paper reports on the first five years of a comprehensive, integrated approach to diabetes care at the Group Health Cooperative of Puget Sound. The program is population- and evidenced-based as well as patient-centered. Primary care teams receive support from an electronic diabetes registry, evidence-based guidelines, patient self-management support, and decentralized on-site consultation with a diabetes expert team. By 1998, more than 70 percent of the cooperative’s diabetes patients had undergone a dilated retinal examination and micralbuminuria test, 82 percent had undergone a foot examination, and 68 percent had hemoglobin A under 8 percent—all in the preceding 12 months. Patient satisfaction improved while costs and utilization decreased.


This paper reviews the literature on the effectiveness of organizational interventions for older people. It focuses primarily on interventions for geriatric patients who have been formally evaluated with randomized clinical trials but includes some other designs as well. The paper distinguishes two types of interventions. The first involves component models that can be superimposed on an intact system without fundamentally changing the system. It encompasses comprehensive geriatric assessment and management interventions, new approaches to hospital care, self-management programs, disease management programs, and case/care management. A meta-analysis of geriatric evaluation and management services showed that the strongest and most consistent benefits (mortality, living at home, functional status) are associated with
programs operating in hospitals or rehabilitation units, though the results may not hold in today’s environment. Among the geriatric population, the prototype condition for disease management is congestive heart failure, although there are successes with diabetes and falls. Generic care/case management evidence is limited, but studies show variable success without significant cost to systems. The second type of intervention is system models that modify the basic structure of care and include geriatric evaluation and management that combine assessment with group visits, chronic care clinics, PACE model programs, ongoing primary care delivered by interdisciplinary teams, and primary care delivered in long-stay nursing homes.

The author concludes that while some models (across types) show strong evidence of effectiveness, the gap between knowledge and practice remains wide. Further, implementation issues go beyond simply making a decision to adopt; a change in systems requires major commitments that need a product champion, administrative support, and the willingness to deal with endemic inefficiency. Systems typically cannot afford to invest resources without immediate benefits. Many systems, are not “ready” to make the kind of changes IHI supports, and efforts to move systems to readiness are limited and must take account of market forces. For example, Medicare’s fee-for-service payment for discrete services impedes organizational innovation.

Reuben notes that three programs dominate efforts to develop and test interventions for geriatric patients: the Robert Wood Johnson Foundation’s chronic care program (ICIC) the John A. Hartford Foundation program (Project IMPACT), and the California Healthcare Foundation’s program for elders in managed care (PEMC). At the time the article was written, neither the Center for Medicare and Medicaid Services nor the Agency for Healthcare Research and Quality had invested in major organizational interventions. The fact that few researchers are trained to conduct major interventions is another problem in generating good work in this area. Further, Continuous Quality Improvement (CQI) methods lack prestige and instead focus on improving individual organizations versus building general knowledge. To improve care, better measures are needed that are used to hold systems accountable and provide incentives for improvement. These are particularly important now, as federal and foundation and employer focus on this area. Right now, despite research, progress has remained slow.


This report examines care for high-risk seniors in Medicare managed care via case studies of four managed care organizations selected for their adoption of innovations. The study relies on a literature review to develop a framework, on site visits and focus groups to understand programs in place, and on a survey of three categories of enrollees in each plan: those in the MCO’s care management program, those 85 or older, and those with a recent hip fracture or stroke. Site visits were completed in late 1997 and the survey in 1999–2000.

The survey provides evidence supporting the depiction of the needs of seniors as variable both cross sectionally and over time (making identification harder) and in terms of impairment (physical, mental, and/or with chronic conditions) in ways that make communicating symptoms and needs harder and travel to providers often difficult. In addition, seniors may require the services of several providers to deliver organizationally complex care not covered by Medicare.
and for which there may be waiting lists. Though seniors’ unmet needs were not extensive, adverse outcomes suggest room for improvement. Site visits reinforced the value of the care framework defined at the outset; specifically, identification, assessment, and care management and assistance programs as important ways that MCOs can respond to seniors. The four innovative MCOs emphasized care management, though programs tended to focus on short-term issues, and many seniors were not even aware of their enrollment in an MCO. The authors speculate that care managers did not stand out among all the other providers. Surveyed seniors generally were highly satisfied with their MCOs, and those aware that they were enrolled in care management were also satisfied. A substantial number of high-risk seniors seemed unsure how to resolve care problems. Group model organizations offered some structural advantages over independent practice associations in managing care. Innovation in the four organizations seemed to be fostered by a culture of experimentation in an environment in which support from senior officials existed and where MCOs found ways to draw on community resources. However, limits on the Medicare benefit package and the lack of evidence that more ambitious interventions would be cost-effective constrained innovation. The authors conclude that managed care offers some potential, albeit a constrained potential, to improve care. However, the instability of the managed care market and the stress it is under may limit widespread diffusion.

7. Opportunities and Context of Future Demonstrations and Improvements


This brief reviews the provisions of the Medicare Modernization Act of 2003 related to quality in Medicare Advantage plans, the traditional program, mandated studies, and authorized demonstrations. Both Medicare Advantage plans and the traditional program must institute quality improvement programs to address chronic care while Medicare Advantage plans must specify a method for monitoring and identifying enrollees with multiple or sufficiently severe chronic conditions. Under the MMA, CMS is required to establish programs that will improve clinical quality and beneficiary satisfaction and achieve spending targets for beneficiaries with certain chronic care conditions. Disease management organizations, health insurers, integrated delivery systems, or physician group practices are to carry out the programs by relying on chronic care improvement organizations. Chronic care improvement organizations are to guide beneficiaries in managing health, using decision-support tools, and developing a clinical information base to track, monitor, and evaluate outcomes. The act also calls for a five-year demonstration project (multiple sites) to examine the factors that encourage improved quality in patient care as well as for a three-year pay-for-performance demonstration and research to improve quality of care for chronically ill Medicare beneficiaries, among other provisions.
This paper and the related presentation describe the coordinated care initiative included in the Medicare Modernization Act of 2003 as well as the CMS plans for the pilot. The initiative is built on public/private collaboration. The pilot will assume that private sector organizations will develop the requested coordinated care programs and take be willing to risk their fee on the results they achieve (“fee-risk”). Large target populations are desired to support evaluation, and randomized trials will be used. The pilots have a three-year time frame and can address comorbidities as well as the primary condition. They assume that a 5 percent savings is realistic over three years, taking into account fees to sponsors of the pilots. The initiative may offer both disease management and case management programs. While some physicians are concerned that programs sponsored by the disease management organizations may compete with the physician’s own care, CCI should be structured to complement and support physician practices.


This report follows up IOM’s Quality Chasm Report and responds to a request by HHS that IOM identify possible demonstrations that could be implemented in 2003 to develop viable models of broader health systems reform. IOM views the demonstrations as a building block to broad-based reform, planting the seeds of innovation and creating an environment conducive to success. IOM recommends five categories of demonstrations based on two sets of criteria: results intended to improve health status, generate system improvements, reduce waste, or stimulate continued innovation; and the likelihood that successful implementation is enhanced by public and policymaker support, a generally strong base of support, recognition and removal of barriers, and building on existing competencies. Chronic care demonstrations that reduce the toll of chronic conditions are the first of the five demonstration categories mentioned (the others relate to community health centers, paperless health systems, affordable coverage, and liability).

Chronic care demonstrations are expected to achieve change at two levels: (1) redesigning the delivery system to provide ongoing care that is coordinated cross multiple providers (acute and long-term care and social services supportive of patient self-management; and (2) implementation of communitywide education to improve the subject population’s health by making extensive use of information and communications technology. The concept is to start with Medicare beneficiaries and ultimately expand. Implementation is to involve a broad-based coordinating structure with the participation of all stakeholders. Chronic care management is to be evidenced-based, focus on services that detect and minimize the consequences of common geriatric symptoms, and include extended outreach and coordination with social and environmental services. Programs are to employ systematic approaches, use multidisciplinary teams that tap clinical expertise, and provide information and other support to patients for self-management.

8. Older and/or More Specialized Articles

This article describes the initial testing of the Assessment of Chronic Illness Care (ACIC) tool, which helps organizations evaluate their strengths and weaknesses in the delivery of chronic care in six areas: community linkages, self-management support, decision support, delivery system design, information systems, and organization of care. Teams completed the tool at the beginning and end of collaboratives focused on diabetes and congestive heart failure. The results showed improvement, particularly in decision support, delivery system design, and information systems, with particularly high scores for patient self-management at the end of the CHF collaborative. The authors conclude that the tool is responsive to changes in quality improvement efforts and thus useful in guiding improvements.


