

Chronic Disease Management: Breakthrough Opportunities for Improving the Health And Productivity of Iowans

A Report of the Iowa Chronic Care Consortium

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Background

The Iowa Chronic Care Consortium is a collaboration of public, private, academic, and governmental participants coordinated by Des Moines University to develop a telecare pilot project to manage the most prevalent chronic diseases that affect people in Iowa—diseases including but not limited to chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), diabetes, and asthma.

The Iowa Chronic Care Consortium—whose ranks expanded during 2002—includes individuals from throughout Iowa who have laid the groundwork for a broad-based statewide pilot project. Planning has been possible through funding by selected partners, private foundations, and a grant from the Iowa Department of Economic Development. The Consortium has sought Federal support for the pilot project to begin during 2003.

The initiative has been funded through a true partnership of private, state, and foundation resources. Outcomes are anticipated to provide a comparison of the effectiveness of chronic disease management strategies and their proportional benefits, and will guide investments in subsequent programs. Recommendations related to chronic disease management that arise from the project will enable Iowa's health care delivery system

participants to contain costs while improving the quality of care and ensuring better health for patients.

HF 732 enacted by Iowa's 79th General Assembly and signed by Gov. Tom Vilsack in 2002 provided for an appropriation of \$150,000 in state matching funds for the Iowa Chronic Care (formerly TeleCare) Consortium in addition to the project's federal and private funding. As stipulated by the Iowa Legislature, a report on the status of the program was presented to the General Assembly on January 15, 2003.

It is significant to note that the federal government has yet to pass its budget for the current fiscal year. The plan to deploy a comprehensive, proactive chronic disease management demonstration project relies upon federal support, which will likely be determined by the spring of 2003. The Consortium remains optimistic that such support is forthcoming since the project is clearly beneficial to the people of Iowa and is supported by both public and private sectors.

Executive Summary

Chronic disease management is an organized program of intervention for people who suffer from chronic diseases. The most common chronic diseases—diabetes, congestive heart failure (CHF), asthma, and chronic obstructive pulmonary disease (COPD)—are frequently the focus of such programs. Chronic diseases affect just 5 percent of the nation's population, but the care and treatment of these diseases consumes 50 percent of our health care services (*Future Health*, 1999).

The goal of chronic disease management is to achieve one or more favorable outcomes, such as cost containment, measurable improvement in a person's health, greater clinical effectiveness, or improved patient satisfaction. An extensive review of literature and programs provides growing evidence to support the efficacy of chronic disease management when smartly conceived and properly executed. The positive experiences of health care providers, health plans, employers, and individuals associated with chronic disease management in Iowa underscore the value of such programs.

Despite the progress in developing effective chronic disease management programs, however, questions remain regarding which of these programs is effective and who should make the up-front investment for planning and deployment. Such questions have been an obstacle to implementing wide-scale chronic disease management programs elsewhere in the country.

The Iowa Chronic Care Consortium

In the summer of 2000 a group of providers, employers, associations, unions, medical professionals and state agencies in Iowa began exploring how obstacles to chronic disease management programs could be overcome. Their motivation, both then and now, reflects an overriding concern for improving the health of people in Iowa by giving greater attention to individuals with chronic disease.

Members of the Consortium noted early on that Iowa's rural demographics were an obstacle to certain individuals getting health care despite their obvious need. The prevalence of chronic diseases in Iowa along with the state's aging demographics heightened the need for chronic disease management.

Given the rural character of Iowa, the prevalence of chronic disease and the increasing costs of health care, the need for chronic disease management was apparent. Several concerns emerged: Considering the size of the state, its community-minded character, the relatively close relationships among payers, providers, health plans, and the comparative manageability of the system, why should Iowa wait for a model to be developed elsewhere and transported into the state? Indeed, would it be possible for an Iowa leadership group with experience in health care to design chronic disease management strategies that could serve as examples for other states and regions? Would it be possible to do something special for all of our citizens, especially those affected by chronic diseases?

Drawing upon research on telephony-based chronic disease management programs, the Consortium envisioned that the telephone, and possibly videophones, could be incorporated as program extenders and thereby increase access to health care for people in Iowa with chronic diseases.

With Iowa's special opportunity to take a leadership role in chronic disease management, the Iowa Chronic Care Consortium was formed. Initial funding came from private foundations, Des Moines University, the Iowa Department of Economic Development, and the Iowa Farm Bureau along with technical assistance from Iowa Health System and Mercy Health Network. Other partners who joined the effort include the Iowa United Auto Workers, the Iowa Area Development Group, the Iowa Diabetes Association, the Iowa Department of Elder Affairs, the Iowa Department of Human Services, the Iowa Department of Public Health, and other professional groups and physician leaders.

Initial efforts involved research, planning, and design of chronic disease management strategies throughout the state. The effectiveness of many current programs has been analyzed, prevalence rates have been estimated, preliminary program delivery models have been developed, intervention strategies have been evaluated, and telecommunications strategies have been assessed.

A key motivation has been to develop strategies that would take programs directly to individuals, such as to their homes and places of business. The work also focused on creating strategies that would include rural participants, whose access to health care may be limited by reduced ambulation or lack of transportation. Hence, telecommunications strategies have been considered as an extender to make chronic disease management programs widely accessible, especially for rural Iowans.

Working objective

The working objective of the Consortium is to design and deploy a statewide demonstration initiative or model that would involve 1,000 or more Iowans affected by diabetes or congestive heart failure through specific management programs for chronic disease. The plan is to deploy one or more such programs over a three-year period in a

collaborative venture where providers, employers, health plans, and governmental agencies would remain active from program design through evaluation of results. These parties would select the chronic disease management programs to be used and compare outcomes to predetermined objectives.

Outcomes would compare the relative effectiveness of chronic disease management strategies, identify proportional benefits to help guide future investments, and provide a series of recommendations related to chronic disease management that would enable Iowa Health System participants to contain costs while improving the quality of care.

Chronic Disease: Challenges to Improved Health

Chronic disease challenges the entire health services field. The greatest impact, however, is upon the people who suffer from common chronic conditions. Individuals with chronic diseases tend to be disproportionately heavy consumers of emergency room visits, in-patient hospital days, prescription medications, and advanced diagnostic testing. More important, these individuals have a higher risk for loss of mobility and related depression, which may lead to cyclical patterns of declining health and costly emergency interventions.

Nationwide, 70 percent of health care expenditures are directed toward chronic illness (HCFA, 1999). In Iowa, that percentage may be even higher. The leading chronic diseases in Iowa, which reflect nationwide patterns, are diabetes, congestive heart failure, asthma, and chronic obstructive pulmonary disease. The prevalence of diabetes nationwide is 6 percent. In Iowa the rate is 6.7 percent and, between 1998 and 2000, Iowa experienced a 29 percent increase in the prevalence of diabetes (Iowa Census, 2002). Congestive heart failure is a medical condition that affects nearly 42,000 people in Iowa

(Iowa Health System, 2002). Combined with aging demographics, Iowa's rural character influences the prevalence of these and other chronic diseases.

Certain positive behaviors and practices are known to mitigate unnecessary hospitalizations, surgical procedures, and medications while avoiding some of the devastating loss of function and mobility among people with chronic diseases. Noncompliance with prescribed self-care, prescription medication regimens, and recommended health changes is extremely costly to the individual as well as the health care system.

Growing evidence points to a gap between appropriate clinical protocols and patient compliance, resulting in compromised health. Among patients with diabetes, for example, studies have shown that 54 percent did not see an ophthalmologist during the prior year; 84 percent did not receive a hemoglobin A1C test during the prior year; and 45 percent did not receive cholesterol screening during the prior year (*JAMA*, 1995). Only 27 percent of asthma patients received an inhaled anti-inflammatory drug to control symptoms (Meyer, 2002). Only 40 percent of heart failure patients received echocardiography tests within three months of initial diagnosis (*Medical Statistics*, 1999). Insufficient preventive care often results in loss of function and additional costs to patients, payers, health providers, and health plans—costs that could have been avoided.

Chronic disease management programs, on the other hand, can increase the effectiveness of preventive care and promote improved health outcomes.

Chronic Disease Management: Building the Business Case

Rather than a single, standardized program, chronic disease management is an organized program of intervention for people affected by chronic disease. Mounting evidence in research publications and the lay press affirms the value of chronic disease management:

- A recent study conducted by a Pennsylvania health plan, which involved patients in a diabetes management program, showed a costs savings through lower claims for both

commercial and Medicare risk insurance. In addition, the study reported a reduction in other measures of health care use as well as improvement in measures of quality care as rated by patients (*Diabetes Care*, 2002).

- The University of Tennessee Medical Center completed a home-based telemedicine program with 34 patients suffering from congestive heart failure. After the patients had participated in the program for 12 months, including home monitoring by nurses at a remote location, the hospitalization of these patients averaged just 1.26 days compared to a national average of 6.2 days.

- John Deere Health Care provided coverage to 20,000 members with diabetes in five states at the time of a recently reported study. The cost of medical care for those diabetic members was nearly three times the cost for non-diabetic members. Following one year of an integrated diabetes management program, the overall costs per patient were reduced by 12 percent (*American Journal of Managed Care*, 2000).

- To contain increasing health care costs and insurance premiums, employers and health policy makers are focusing upon combinations of strategies. Key among the strategies is chronic disease management (*USA Today*, 2002).

In Iowa, two examples provide valuable evidence that chronic disease management programs work. Iowa Health System recently received national recognition for its innovative work in diabetes education. Featured objectives of the Iowa Health System Diabetes Initiative, which uses a proactive nurse-call contact as its primary communication, were a reduction in the Hemoglobin A1C level, health-related behavioral changes, and improved patient satisfaction. Specific performance targets were set prior to the program. Each of the target performance standards was met or exceeded. A1C levels were reduced by 2 percent, which translates into decreased morbidity and mortality (Iowa Health System, 2002).

Mercy Health Network, which has widely dispersed hospitals in both rural and urban communities in Iowa, recently completed a demonstration telemanagement project involving 182 patients with congestive heart failure. This proactive disease management initiative included patients in the communities of Clinton, Dubuque, Sioux City, Mason City, and Des Moines. The results are notable. First, patients gave the program high marks. Second, hospitals showed substantial cost savings. But most important, 84 percent

of hospital readmissions were avoided when admissions for program participants were compared against projected admissions for patients with congestive heart failure (Mercy Health Network, 2003).

The financial benefits of Mercy's telemanagement project are worth noting. Avoided admissions were estimated at 202 for the 2000-01 program period. Based upon typical reimbursement and payment models, the estimated health insurance gross savings was between \$627,000 and \$668,000. The savings to patients was estimated at \$167,000 to \$209,000. The estimated hospital savings was \$152,485. The estimated total net savings was between \$921,485 and \$1,004,485. And there may have been additional savings by avoiding post-hospitalization office visits (von Ebers & Associates, 2003). By contrast, the estimated cost of Mercy's disease management program was \$25,000.

These and other studies highlight how chronic disease management looks beyond cost savings alone; other outcomes are clearly at stake. There is a paired societal expectation, for example, that costs need to be leveled or contained while the quality of care must be ever advancing. The Clinical Value Compass developed by the Hitchcock Clinic sets the stage for measuring outcomes for chronic disease management as well as other interventions. The concept is to capture a range of values through which health programs are often measured. Cost containment or savings is one value. But improved health, clinical effectiveness, and patient satisfaction may well be measures of equal weight for patients or employers. This more complete "compass" provides a stage for evaluating outcomes against the differing expectations among participants in health care programs.

Obstacles to Implementing Chronic Disease Management

While there is ample evidence that appropriate chronic disease management increases patient satisfaction and saves costs, there are still obstacles to widespread deployment. Providers, health care plans, payers, and patient consumers do not have the same expectations for what is most important in chronic disease management. Patient satisfaction may be high on the list for one group while cost containment may be the priority for another. As a result, one group's chronic disease program of choice may not

be the choice for all groups. And beyond the differences in disease management programs, expectations differ as well.

This challenge of mixed expectations has often been an obstacle to widespread adoption of chronic disease management since both the development and practice of such programs require resources. Even where the desired outcome is cost containment or cost reduction, there have been concerns over proportional benefits to payers, patients, health plans, and providers. Health plans and government groups have been more likely to design and use programs based solely on benefits, and particularly cost savings, that will accrue to their enterprise.

There is now the opportunity to design effective programs where members of the health system can collaborate on selecting components by anticipated outcomes. Collectively answering questions regarding which chronic disease strategies are most effective and who should pay for planning and deployment will help open the door to wide-scale implementation. Collaborative demonstrations combined with evaluation based on pre-determined measures hold the greatest promise for assessing who will develop and operate chronic disease management strategies and who will benefit.

Deliverable products emerging from the Consortium's planning include the following:

1. Creation of State-Wide Iowa Chronic Care Consortium. Development of the Consortium has been ongoing. The formal organizational meeting of the Iowa Chronic Care Consortium occurred in June 2002. Communication among members has continued both formally and informally since initiation. The group now comprises the Leadership Committee and the Technical Committee. The Leadership Committee was formally organized as the Iowa Chronic Care Consortium, an independent not-for-profit entity.

2. Design an Action Research Model. The Consortium conducted an active review of related research on proactive chronic disease management. Results led to the decision to focus upon congestive heart failure and diabetes when designing subsequent models. Research was reviewed for the proven ability of proactive chronic disease management to

achieve results: reduce costs, increase medical effectiveness, improve health and increase patient satisfaction. The challenge was to create plans for deployment using telephony as an extender. Telephone and videophone technology, along with related software, have been evaluated for their applications to the disease management model.

3. Deliver Technical Assistance in Policy, Funding and Education. Models deploying proactive chronic disease management have been evaluated. These include refereed research studies as well as action programs currently employed by providers and health plans. Costs have been analyzed and benefits have been evaluated. A final report of the Consortium demonstration plan will offer some assessment of such results. The methods for delivering an effective proactive chronic disease management program are less labor intensive than originally anticipated. Whether such training will be completed by the chronic disease management provider or by an external body has yet to be determined. Several operational models remain for deploying the demonstration project.

4. Achieve Financial Support Commitments. One of the key objectives has been to secure funding through the federal government and other sources. What has been learned through the course of the project has influenced the amount of outside support required to deploy a compelling demonstration project for managing CHF and diabetes in Iowa. A comprehensive chronic disease management demonstration project in Iowa focusing upon 1,000-plus participants having CHF and diabetes can effectively be conducted over a three-ear period for substantially less than originally estimated. An earmarked Congressional appropriation has been developed and appears to have lived through two shifts of majority in the U.S. Senate. Given these shifts and the delay in finalizing the federal budget for the current year until February 2003, it is appropriate to report that the Iowa Chronic Care Consortium is working to reach an appropriate level of support. The governor has supported the project through communications with Iowa's federal elected officials. Additionally, the Iowa Farm Bureau and other organizations have committed resources toward implementing the demonstration project as a match to potential federal support.

5. Effectively Administer and Manage the Project. The Iowa Chronic Care Consortium initiative has achieved progress in building an effective partnership, evaluating the elements for deployment of a broad based demonstration project, and completing homework in its goal of achieving federal support. This effort has been accomplished on time and on budget.

Research conducted by Iowa Health System on behalf of the Consortium has identified ten chronic disease management interventions that may be employed in the demonstration project. Eventually, deployed programs will likely include one or more such interventions. Contributions of health systems, health policy planners, and other representatives of the private sector have been substantial toward developing the processes, protocols, and research that form this initiative.

Summary

The final objectives and measures will set the standards for success and create the case for more widespread application of chronic disease management. While savings in excess of program costs would be a minimal standard, targeted goals may seek a much higher level of return on investment. The Consortium is interested in designing and deploying proven strategies that will achieve a compelling return on investment along with improved outcomes in clinical effectiveness, patient satisfaction, and health status.

The definitive outcome for this health care change initiative will be the routine adoption of chronic disease management models by health care plans and the health care delivery systems in Iowa. This includes HMO, PPO, self-insured, and Medicaid health plans as well as provider delivery of services. The Consortium believes that the interests of patients and businesses in chronic disease management are compatible. The desired outcomes of containing costs, improving the health of patients, and advancing the productivity of Iowans are entirely within the reach of this initiative.

Attachments

- [Iowa Chronic Care Consortium Structure](#)
- [Iowa Chronic Care Consortium Leadership](#)
- Alternative Operational Models

- Potential Chronic Care Disease Management Interventions
- [Clinical Value Compass](#)

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