Challenging the Status Quo in Chronic Disease Care: Appendix with Detailed Case Studies

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Sutter Health Sacramento Sierra Region

Sutter Health Sacramento Sierra Region (Sutter Sac-Sierra) includes five hospital campuses and three large medical groups or IPAs. It is one regional part of the larger Sutter Health System, which itself has 27 acute care hospitals and more than 3,400 physicians in seven physician medical foundations.

The Sutter Sac-Sierra physicians, who serve a geographic area extending over three counties and a 100-mile service area, participate in one of two foundation-model medical groups—Sutter Medical Group and Sutter West Medical Group—or in an IPA, called Sutter Independent Physicians. The system is vertically integrated and owns some skilled nursing facilities and home health and hospice services.

A substantial portion of Sutter’s business is provided on a capitated, financial risk basis, sometimes involving full, global capitation in which the hospital is at risk with the medical groups. More often in recent years, the system has assumed financial risk for the professional, but not hospital, services. Of its 200,000 capitated patients, more than 75 percent are under global capitation. About 15,000 of these are seniors with Medicare Advantage plans (PacifiCare’s Secure Horizons and Health Net), and the remaining 25 percent of commercial members are under professional capitation only.

Program Development

In fact, a crucial catalyst for the Sutter Sac-Sierra Chronic Care Program was the development of capitation contracting with health maintenance organizations (HMOs). As far back as 1994, PacifiCare—which contracted with Medicare under what was then called the Section 1876 risk-contracting program—had worked with Sutter Sac-Sierra to conduct “care coordination” on 4,000 to 5,000 Medicare patients, especially those who were considered frail and manifesting various geriatric conditions. The patient population that was initially emphasized in a pilot program at Sutter Medical Group were those with social caregiver needs, e.g., isolation, lack of transportation, and medically complex health needs.

That pilot used a validated risk-screening tool targeted at patients considered at high risk for hospitalization, unnecessary emergency department (ED) use, and long-term care institutionalization. At the time, PacifiCare was one of three HMOs interested in working with Sutter because they considered their own relationship with these patients too distant. They also wanted to study the impact of “care management” for identified high-risk patients. Importantly, because it was taking financial risk for this population, the Sutter Medical Group had a financial interest in reducing hospitalizations and other unnecessary services.

The results of the pilot, involving a few thousand patients, demonstrated basic success but revealed some practical problems. The Sutter care coordination program, which in prevailing terminology might be called case management, did reduce hospitalizations; thus, under a global capitation arrangement it was actually more financially beneficial to the hospital than to the medical group. At the same time, because the pilot was based in the medical groups, the involved system hospitals felt no “ownership” over the program even though it was benefiting financially from the reduced admissions.
The system found that certain approaches to care coordination, which also included the standard utilization management tools of prior authorization and discharge planning, were proving successful, but because of an absence of cross-setting planning, costs were often shifted to other providers, even within their own system, rather being actually reduced. Thus, the problem faced in the late 1990s at Sutter represents a recurring theme seen across the case studies, namely, that of “division of financial responsibility” across health providers and health plans.

In 1998, the initial care coordination pilot was reorganized with an attempt to define a common set of skills that the care coordinators would have, with the idea that an individual would be able to follow the same patient across care settings. However, assessment of this reorganization suggested that the program experienced an unsatisfactory loss of setting-specific knowledge. The tension between nurses with extensive disease-specific knowledge and the desire to serve patients with extensive co-morbidities persists.

A 1999 program reorganization produced the chronic care configuration that continues. Two separate but related activities were defined. “Case management” (which now is labeled “disease management,”) was developed as a complementary program to the “care coordination” program—the continuation of the original pilot program. Case management had a specific disease focus, whereas care coordination addressed higher acuity patients with needs that could not be well defined by attention to their underlying clinical conditions. In both cases, chart review and discussion among the physicians suggested that some patients would probably benefit from non-physician interventions designed to reduce ED visits and avoidable hospitalizations. The particular approaches used, however, differed for the different populations.

At that time, Sutter Sac-Sierra itself decided to outsource condition-specific, disease management to LifeMasters, a disease management company that typically contracted with health plans. In response to the program, however, the staff physicians at Sutter’s medical groups thought the activities of the external vendor were often intrusive and, at times, not reliable, e.g., faxed paperwork did not arrive as promised, raising both clinical and liability concerns. At times, patients were simply referred to emergency departments because of a failure of communication with the disease management company professional. An internal Sutter analysis showed that staff physicians seemed to be withholding referrals to LifeMasters.

A further problem arose with the reliance on an external CHF disease management vendor: The delivery system was not comfortable with standards of care that varied based on insurance and payment arrangements. Sutter had contracted with LifeMasters only for patients for which it was taking risk. By bringing disease-specific “case management” in house, it was easier to develop one standard of care.

Another factor influencing the decision to move the CHF program internally was that the outside vendor was not willing to become engaged in making medical decisions, such as changing medications according to protocol. An important component of the internal disease management program is the reliance on nurses to alter medications on the spot, with communication with the patient’s primary care physician to ensure clinical follow-up. Finally, a major facilitator of the internal communication has been the installation of an electronic medical record (EMR), the EPIC system, which has been used in the two medical groups since 2003.
The Programs
There are two primary components of Sutter’s Chronic Care Program, labeled “care coordination” and “disease management.” Care coordination is targeted to patients, regardless of underlying diagnosis, who are at risk of avoidable ED visits and hospitalizations, and, in some cases, long-term care institutionalization. The care coordination team is composed of registered nurses located in the physician office setting and medical social workers and “health care coordinators” who work with patients and their families to provide plans of care and to troubleshoot when problems arise. A clinical pharmacist is available to provide advice to the staff on the team and, when necessary, to meet with individual patients.

The patient retains her usual primary care physician, whom she selects to serve as her usual source of medical care. However, in a departure from the Chronic Care Model, the primary care physician is not part of a formal team; program developers have determined that busy physicians are reluctant to attend team meetings. Rather, the care coordination team, physically located near physicians, serves as an intermediary between patient and physician to address issues that arise. Team members describe a “fluid dialogue” between care coordination team members and patients’ primary care physicians.

The care coordination program has its own Medicare director, who serves as a part of the multidisciplinary team, rather than the individual physicians in the medical group. This director is in a position, then, to provide guidance to team members on complex clinical matters and at times to communicate with patients’ primary care physicians or other specialists involved with the patients’ care. About 2,000 patients and families are assisted by care coordination. The care coordination program interventions are not typically performed as part of routine physician care. As articulated by the program, which is the first provider-based program to receive JCAHO certification, the care coordination program interventions attempt to:

- Provide integrated care planning and interventions through home and telephone assessments.
- Decrease caregiver anxiety through the provision of emotional support and assistance with obtaining respite and other community resources.
- Provide ongoing monitoring of symptoms and early detection of acute exacerbation of chronic illness.
- Prevent patient injury through home safety evaluations and alterations.
- Provide education to increase patient and caregiver understanding of disease processes and symptom management.
- Coordinate the utilization of Sutter services by identifying and referring appropriate patients.
- Assist patients with end-of-life issues, advanced directives and hospice referrals.

Consistent with the fact that patients for whom care coordination is provided are not selected for having specific conditions but rather have chronic care management and coordination needs, the program evaluation relies on broad measurements, including patient and physician satisfaction, whether or not advance care planning discussions have occurred, and various parameters of utilization.
Typically, a specific care plan is developed for each patient in care coordination, either by a registered nurse or master of social work, each of whom works with about 200 patients and their families. Unless the patient is being seen by personnel from a home health agency, the patient typically will experience both an office visit and a home assessment in order to complete a plan of care. A component of the assessment is a mini-mental status exam and a depression screen. Once the plan is established, implementation is transferred to a “health care coordinator,” who usually does not have advanced training beyond a bachelor’s degree. The care coordination professionals are located in the actual practices, an arrangement that promotes physician referrals, the major source of patients in the program.

The disease management program activities have a more limited scope and orientation, and they focus on a few specific medical conditions, congestive heart failure (CHF) and asthma and patients on anticoagulants. These distinct disease management programs also have received JCAHO certifications. The Sutter Heart Failure Telemanagement Program, which began in 2001 and serves about 500 patients, assists selected patients primarily through telephone interaction between patient and non-R.N. trained “specialists,” who work together with nurses with expertise in cardiovascular diseases. The specialists provide consultation, support, and information through regular telephone appointments—usually one per month—although patients are encouraged to call in at other times if they are experiencing problems. For clinical problems that require medication management, the nurses rely on protocols to adjust medications based on patient signs and symptoms without having to obtain initial approval from the patient’s primary care physician.

The specific interventions adopted in the Heart Failure program reflect approaches used in third-party disease management. However, they are administered not by a distant nurse via telephone but rather by specialists and nurses called “case managers.” These specialists are located with about 25 primary care physicians in the various group practice delivery sites across the region, thereby facilitating communication with patients’ primary care physicians. Sutter believes that its internal disease management program works better with physicians in the two medical groups where the staff are co-located than with physicians based in their own practices, who are affiliated with Sutter through Sutter Independent Physicians.

Patients for the program are identified through physician referral and through mining of administrative data; for example, selection of patients with recent ED visits. Recently, the program has supported these more traditional identification approaches with the use of predictive modeling software, RiskSmart. Yet early identification of patients who would benefit from care coordination remains a major challenge for the program.

CHF disease management services include:

- Scheduled telephone monitoring of patients’ signs and symptoms and medication adjustment.
- Extensive teaching about CHF, diet, medication, symptom recognition, exercise and activity planning, risk-factor reduction, and chronic-condition coping skills.
- Coordination and referral to other Sutter services.
Because of the disease-specific focus, evaluation relies on measures specific to the condition, in contrast to the measures used for care coordination. For CHF, a prominent measure is use of appropriate medication (Angiotensin-converting Enzyme [ACE] Inhibitor or Angiotensin II Receptor Blocker [ARB] usage), primary care physician (PCP), specialist and ED visits for CHF, admissions for CHF, and patient quality of life based on a survey. Tracking PCP and specialist visits has allowed Sutter to determine that heart failure program nurse interactions often substitute for physician visits, which, again, is desirable under capitation.

Based on the perceived success of the heart failure program, Sutter next initiated a similar disease management program for patients on oral anticoagulants, who benefit from close monitoring of their anticoagulation parameters, as measured by frequent blood tests. Because anticoagulation blood levels can be affected by changes in diet, disease status, medication compliance, drug regimen alterations, alcohol use, and other social and medical factors, Sutter Sac-Sierra believes that active nurse advice and surveillance serves as a useful adjunct to usual, medical practice.

As with the heart failure program, nurses use standardized protocols and procedures to adjust medications based on laboratory measurements of anticoagulation status. The anticoagulation program, which has found wide acceptance in the physician community, serves about 1,800 patients and, in comparison to the heart failure patients, relies more on registered nurses and less on other professionals to interact with patients in the program. More recently, Sutter has initiated asthma disease management for both adults and children, with 75 patients involved, and adult diabetes, already with 2,000 managed care patients. A depression program is now in place as a study conducted from UCLA.

Sutter has found that it is not uncommon for a patient in one of the disease management programs to be referred to care coordination when his or her condition worsens. Despite often having multiple chronic conditions, each patient is assigned one primary care coordinator unless the patient is also in the anticoagulation program. This process is analogous to the situation in third-party disease management, which may involve transfer of patients from disease management to case management when the patient’s conditions worsen and she has increasing difficulties with daily activities.

Lessons Learned and Policy Implications
In recent years, program managers thought the home-grown disease management and care coordination programs were desirable, achieving clinical benefits, but came with added costs. The labor associated with disease management was a cost center and generated no revenue directly. With this realization, program advocates also had to try to make a business case for applying it broadly for all patients, particularly traditional, fee-for-service Medicare patients.

Because the Sutter Sac-Sierra hospitals fund more than half of the disease management and care coordination programs, it was particularly necessary to consider the hospitals’ business cases for this investment. Financial analysis produced a rationale that has been echoed in the other case studies, namely, that under Medicare hospital prospective payment, medical patients are relative losers and surgical patients are relative winners. This distinction is relatively unimportant when hospitals have excess capacity; then, it is desirable to fill beds by taking any and all admissions. Therefore, when Sutter’s hospitals had 85 to 90 percent occupancy by 2001-2002, it became important to keep beds for surgical admissions.
The analysis also revealed that the system was losing money on the “observation” patients staying in the hospital less than 24 hours. Further, many of the medical admissions were high-intensity, often requiring ICU stays that Medicare’s DRG-based payment system did not specifically pay for. Therefore, the care coordination and disease management programs, by avoiding some medical admissions for common chronic conditions, did support the hospitals’ business case even under traditional, FFS Medicare. The Sutter shorthand became “lose DRG, gain space.”

Planners thought that, at best, the evolving disease management programs would break even. Yet over the few years of their existence, internal studies showed that the heart failure and anticoagulation programs have actually saved money in a number of ways. There have been ambulatory care substitution effects, with a reduction in visits to primary care physicians for patients in disease management. There have also been reductions in ED visits and hospital admissions, despite some offsetting increases in home health and skilled nursing facility costs.

In short, for managed care patients for whom Sutter receives capitation patients, the return on investment (ROI) analysis has been robust for both heart failure and anticoagulation. In contrast, there is no immediate payback for the disease management investment in reduced hospitalizations for diabetes, although at times, limited hospital capacity does modify the basic negative business case for diabetes. In addition, some perceive that a better infrastructure for chronic disease management leads to better inpatient management and, therefore, a less costly inpatient stay.

The ROI on FFS patients is much more problematic, although, as noted, not uniformly negative. Because the system wants to provide a single standard of care, it attempts to make programs like disease management available to all patients. However, largely because of the problematic business case under FFS, including traditional Medicare, Sutter’s chronic care programs simply do not have the capacity to do all it might for Medicare patients. Nevertheless, about 42 percent of patients in the care coordination program are non-managed care, mostly traditional Medicare patients.

For the most part, Sutter Sac-Sierra’s internal chronic care programs duplicate attempts by health plans and their contracted disease management vendors and case managers, who may also be intervening with the same patients. Thus, patients may experience multiple conscientious case and disease managers, resulting in what the program’s medical director has called “polymanagement syndrome.” In addition to wasted resources, patients and families may get frustrated figuring out who is in charge when multiple disease and case managers are involved. Also, physicians are frustrated responding to outside personnel, whom they consider extraneous. Although the health plan activities are well-designed, one of the prime drivers for moving to internal programs was the view that they were more effective because of close collaboration with patients’ usual clinical professionals.

Having the staff of the care coordination and disease management programs located in the group medical practice setting, an organizational approach that was developed after program initiation, is viewed as positive both because communication with the primary care physicians is facilitated and because it is a source of political support. The group practice physicians have
become advocates and are a reason for program expansion to non-managed care patients. The corollary is that physicians who are not in group practices but rather are IPA physicians in their own practices create unique challenges, but most remain involved and supportive of the program.

Park Nicollet Health Services

Park Nicollet Health Services is a nonprofit integrated care delivery system that consists of two main entities: Methodist Hospital and Park Nicollet Clinic. Methodist Hospital, located in St. Louis Park, adjacent to Minneapolis, in Hennepin County, has 426 beds, 2,800 employees, and more than 960 physicians on its medical staff. It is JCAHO-certified as a health care system. Park Nicollet is one of the largest multispecialty clinics in the United States, with nearly 500 physicians and 300 clinical professionals on staff providing care in 45 medical specialties and subspecialties at 25 clinics throughout the Twin Cities metropolitan area. Although Methodist Hospital is part of the Park Nicollet system, because of the broad geographic area covered by the medical group locations, inpatient stays also take place in hospitals that are not part of Park Nicollet Health Services.

Program Development

Similar to Sutter Health, Park Nicollet has had extensive experience with private plans serving Medicare beneficiaries, now called Medicare Advantage plans. Historically, Park Nicollet had contracted with health plans on a risk-sharing basis. Risk-based contracting afforded Park Nicollet the opportunity to design care processes to lower costs from improved ambulatory approaches to care management and care coordination and to benefit financially from these enhancements. However, the Twin Cities area had relatively low payment rates for Medicare Advantage plans, and, over time, Park Nicollet found that negotiated capitation rates provided little opportunity to benefit from any savings the system might generate. The contracting environment was also difficult because of consolidation of health plans; three plans now dominate the health plans market.

Accordingly, Park Nicollet ended risk contracting and returned to FFS reimbursement for Medicare and commercial patients. Park Nicollet also has had experience in the Minneapolis area with the Buyer’s Health Care Action Group’s Choice Plus Model used for self-insured employers. The model features direct contracting with health care groups and provides varying consumer cost-sharing based on tiering the care groups based on a combination of cost and quality performance and financial bids that the care groups make. In some ways this competitive model can be viewed as capitation-like. However, the Choice Plus model is available for fewer than 10 percent of patients in the Twin Cities area.

Especially for the population that could benefit most from chronic care management initiatives—the Medicare population—FFS and the incentives provided under FFS remain dominant factors in how Park Nicollet approaches adoption of programs to support care for those with chronic conditions and the frail. Last year, Park Nicollet was selected as one of the programs in the traditional Medicare Physician Group Practice (PGP) Demonstration Project, which provides large medical groups bonus payments for performing well on quality measures and for reducing costs compared to matched control groups. As discussed below, Park Nicollet staff believe that the demonstration provides an important business case for expanding its disease management programs.
Park Nicollet chronic care activities had their genesis in the early 1990s as an outgrowth of activities related to development and use of clinical practice guidelines (CPGs). Some of the major conditions selected for CPG work included chronic disease, such as diabetes. About the same time, as part of total quality improvement efforts, Park Nicollet also examined needed additional support for the basic health care delivery team, particularly in caring for patients with highly prevalent conditions, including coronary artery disease, diabetes, and hypertension.

At that time, with the support of Health Partners, one of the prominent health plans with which the system contracted, Park Nicollet experimented with putting “coaches” (nurses or nutritionists who serve as educators and motivators for patients as an adjunct to physician care) on clinical teams. The coaches also helped patients get to centrally located nurse educators who had specific expertise on these chronic conditions. In addition the nurse coaches performed assessments, provided additional education, and over time were allowed to make protocol-driven medication changes for hypertensive patients. All the coaches engaged patients in smoking cessation.

The coaching/nurse education program was short-lived, despite tentatively showing somewhat improved clinical outcomes in diabetes and hypertension; further, it seemed to be well accepted by physicians and patients. The program did not last sufficiently long to demonstrate financial impact. The reason for its cessation related to difficulty justifying the program from a financial perspective because Park Nicollet was paying substantial expenses for the coaches and nurse educators. In short, the program was viewed as a cost center that did not generate any revenue.

In Park Nicollet’s experience, even in the financial risk payment context that existed for a time in the 1990s, the only chronic conditions for which there are clear short-term financial benefits have been CHF and severe asthma. For other chronic conditions, including hypertension and diabetes, short-term savings are not demonstrable.

Traditional Medicare payment rules were seen as another barrier to continuation of the coaching and nurse education programs. Medicare has “incident to” rules by which nurses can submit claims for activities, such as patient education. However, under Park Nicollet’s approach, where some of the staff were located centrally, away from the care team, the “incident-to” payments would not apply because the nurse was not under physicians’ direct supervision.

By the late 1990s, the three dominant insurers in the area coalesced around particular conditions including diabetes, coronary artery disease, preventions, and depression, relying on practice guidelines developed and maintained by the Minnesota-based Institute for Clinical Systems Improvement (ICSI), a collaborative of health care organizations. With financing provided by the health plans, the clinic was able to add the equivalent of two full-time workers to help with visit planning and to engage in data analysis to assess clinical performance on important clinical problems against common CPG-based measures, particularly for diabetes and coronary artery disease.

Introduction and improved implementation of a systemwide EMR has facilitated data analysis and feedback to physicians to aid physicians in assessing their performance against standards and their peers. The statewide focus on clinical practice guidelines oriented to physicians has continued and has provided a basis for Park
Nicollet’s ability to respond to health plan-initiated pay-for-performance initiatives, which typically emphasize measures associated with secondary prevention for patients with chronic conditions, such as diabetes.

A few years ago, Park Nicollet developed yet a different approach to caring for patients with chronic diseases when it established a dedicated CHF clinic. One of the motivators was that Methodist Hospital, an integral part of the Park Nicollet Health Services system, was experiencing long lengths of stay on admissions for CHF, the most common admitting diagnosis for Medicare patients. Park Nicollet decided that intensive post-hospital attention to the sickest of the CHF patients might lower readmission rates, which at first look seemed to work to the financial detriment of Methodist Hospital. However, such interventions might also result in shorter lengths of stay and lower-intensity care for those patients who inevitably needed to be admitted. The target of attention for the CHF clinic was the sickest of the CHF patients, including any patient with a medical device, such as biventricular pacemakers or intra-cardiac defibrillators. Referral criteria include: patients with ejection fractions below 35; those categorized in CHF Classes III or IV, and those with multiple hospital admissions.

In contrast to typical disease management approaches, the heart failure clinic often involves transfer of primary care from a generalist physician to cardiologists, who in turn relies upon physician assistants (PAs), who, because they are working “incident-to” physicians, can bill Medicare directly for services provided. Thus, in contrast to the previous situation with coaches and nurse educators, the physicians and PAs staffing the clinic can generate revenue to offset their costs. Nevertheless, ROI analysis demonstrated a problem with the dedicated CHF clinic, in many ways similar to that faced by Sutter and indeed to any integrated delivery system conducting business in a FFS payment setting: the misalignment of incentives. In this case, the costs of physician and other professional salaries and associated practice expenses were borne by the Park Nicollet Clinic, whereas the savings in reduced length of stay resulted in financial benefit to Methodist Hospital. Although the revenues and expenses do remain within the same system, explicit cross-subsidizations across sectors often raise difficult internal management issues that in some ways can limit the robustness of potential chronic care management interventions. Still, in this case, the targeted CHF clinic was viewed as preferable to other disease management approaches because it was able to produce some revenue, which a registered nurse-based case manager supporting the clinical team could not generate.

The Programs

Although Park Nicollet maintains the Heart Failure Clinic, newer chronic care programs have been developed in the past two years. One important new program is telephonic-based disease management for a broad group of CHF patients who do not need the dedicated expertise of the Heart Failure Clinic. Relying on a system-wide, integrated electronic medical record embedded in a sophisticated information system, CHF disease management relies on the development and monitoring of a CHF disease registry. About a third of CHF patients cared for in the system are monitored in disease management. Although the program does provide information to physicians to help them identify any deviation from clinical practice guidelines, the major intervention relates to daily telephonic monitoring of selected patients who agree to participate in the program.
Park Nicollet’s approach provides an interesting contrast to that of Sutter. Both have developed their own in-house, disease management programs. However, Sutter’s continues to rely on nurses, social workers, and others located in the medical group practices, to interact with patients through office visits and by telephone, whereas Park Nicollet recently decided to contract with an outside vendor—Pharos Innovations, LLC—that provides a new approach to interacting with patients who have certain chronic conditions. Pharos’s Tel-Assurance technology platform permits patients to use either telephone or Web interface to report data relevant to their CHF, such as symptoms and weight, daily. Nurse “case managers” review patient’s responses via Pharos’s Web site each day and respond telephonically when there are significant, abnormal findings.

This approach permits the case managers to work specifically with variance lists of patients who show evidence of early clinical deterioration and thus to monitor a larger number of CHF patients than possible if they were calling stable patients daily. Although the program includes four case managers managing 600 patients, the program projects a larger patient base with reliance on the Tel-Assurance platform.

The case managers have responsibility for reviewing the Pharos data and for interacting with both patients and clinicians, with whom they usually have face-to-face contact where useful. Protocols provide the four nurse case managers limited authority to modify medications, something that third-party disease management nurses typically refrain from doing. Also, through the protocols, they either provide guidance to patients or direct them to their physicians for clinical follow-up. In effect, Pharos provides technology that permits provider organizations to perform some aspects of disease management directly in order to better integrate the activities with ongoing clinical care for the affected patients. In addition to monitoring and intervening with patients whose clinical conditions worsen, the case managers can arrange patient counseling sessions with patients when deemed beneficial.

Park Nicollet also has instituted a disease management program for diabetes. This program also relies on establishment of a diabetes disease registry of patients in the system. The registry is overseen by a nurse “population manager,” who routinely reviews the data in the registry to identify patients who are overdue for tests or medical visits or who have not achieved agreed-upon clinical goals. The nurse sends letters to patients identifying deficiencies and is able to schedule follow-up appointments on behalf of the patient electronically. The population manager acts as an intermediary between the patient’s principal physician and the patient, although it is oriented more to patients than physicians. For example, the nurse emphasizes teaching patient self-management skills more than trying to address physician performance (although the diabetes registry embedded in the electronic health record permits physicians to identify clinical deficiencies in real time as they are seeing patients). The reliance on a population manager nurse to maintain the information within the diabetes registry limits reliance on physician “list management,” a chore that busy physicians seek to avoid.

Although the primary focus is the diabetic patient, nevertheless, population managers may be located in clinical practice sites, permitting them to directly converse with physicians about patient issues, an important perceived advantage the internal disease management program has over third-party disease management. Location on site also permits another advantage for the diabetes program at Park Nicollet. The system has initiated “point of care testing” for patients to improve their interaction with physicians in
office visits. Diabetic patients needing laboratory tests are asked to come to the practice site 30 minutes before their visit for blood testing performed on site-based, chemical auto-analyzers. Through this approach, lab test results are available during the office visit, and physicians can treat and advise based on current lab tests, rather than having to engage in follow-up phone calls, letters, and office visits. Finally, as with other programs, Park Nicollet’s diabetes program relies on reimbursed diabetes educators, who work with patients to initiate insulin treatment, educate about the use of glucose meters, nutrition education, and other self-management tools.

So far, the focus has been on programs focused on patients with specific diagnoses. Park Nicollet also recognizes the presence of patients, including frail elderly, who are high service utilizers, particularly generating inpatient hospital stays. In the 1980s, the system did have a frail elderly program, but it was not economically sustainable and folded. Very recently, there has been a modest renewal of interest. As an outgrowth of the focus on CHF, the clinic’s senior care department, staffed by geriatricians, will focus on palliative care for patients with severe and worsening heart failure. The PGP demonstration is seen as essential to support more robust chronic care management programs.

Lessons Learned and Policy Implications
Park Nicollet is one of the most successful and highly regarded multi-specialty group practices in the country. It has long recognized the need for programs that enhance the regular practice of targeting patients with chronic conditions. The mission-driven culture has provided support for the initiatives that have come and gone for more than a decade. However, in contrast to Sutter Sac-Sierra, which receives capitation payments, Park Nicollet system providers have for the most part been paid on a fee-for-service basis. Thus, in a number of ways over the years, Park Nicollet’s approaches have been shaped by the particular incentives and rules that support FFS payment approaches.

Those concerned about developing and implementing programs have had to alter preferred approaches in order to generate a revenue base to support the programs. As a result, Park Nicollet had not developed as robust a set of chronic care programs as they had desired. An important impetus for current and future chronic care management programs was the PGP Demonstration Project, initially mandated by Congress in 2000. Park Nicollet was one of ten multi-specialty group practices with at least 200 physicians selected for the demonstration that began in April 2005. Based on claims data showing where beneficiaries get most of their care, the Centers for Medicare and Medicaid Services (CMS) assigns beneficiaries to the group practice. If actual Part A and B expenditures for the assigned population are less than expected and certain quality targets are met, the PGP is eligible to share in savings with Medicare. Standard payments to physicians in the group for services rendered continue.

In short, the PGP demonstration provides an incentive within the original Medicare program for group practices, such as Park Nicollet, to actually reduce expenditures for patients with chronic conditions. Further, the emphasis on quality measures for chronic conditions makes it consistent with pay-for-performance initiatives among private purchasers and health plans. Accordingly, Park Nicollet is planning to expand its disease management programs beyond CHF and diabetes to include coronary artery disease, hypertension, and preventive care. The question is whether the incentives of the PGP demonstration satisfactorily simulate those of full capitation to support the range of chronic care management programs Park Nicollet would like to include (and what happens if and when the demonstration ends).
Integrated Resources for the Middlesex Area, LLC

Integrated Resources for the Middlesex Area, LLC (IRMA) is an organization similar to a physician-hospital organization (PHO) based in Middlesex County, Connecticut. IRMA provides clinical management services, including care targeted to patients with chronic conditions, on behalf of Middlesex Hospital and the 260 physicians on its medical staff. Sixty of those physicians are directly employed by the 275-bed Middlesex Hospital, the county’s only acute care hospital. The hospital also runs the area’s largest home health agency and one of the oldest hospice programs in the country.

Founded in 1996, IRMA, a limited liability corporation subsidiary of the Middlesex Health System, is governed by a board of managers of eight physician members, the IRMA CEO, and the CEO and CFO of Middlesex Hospital. The health system, a not-for-profit holding company, is the sole owner of IRMA and has a definite perspective on the orientation of IRMA activities. Given the physician majority on the board, the operating agreement requires that major issues are decided by a super-majority of the board, thereby ensuring hospital interests are represented. As a matter of practice, the board has never moved forward without a consensus of physician and hospital opinions.

For the most part, Integrated Resources for the Middlesex Area functions as a PHO, joining the interests of a single hospital system, including subsidiary home health, hospice care, and employed physicians, with those of physicians in private practices throughout the community. Virtually all reimbursement to components of Middlesex health care served by IRMA is fee-for-service. Also, because Middlesex County, until recently, was a relatively low-payment county under the Medicare Advantage program, there has been little risk contracting with private health plans in Medicare, such that virtually all Medicare patients seen in the county remain in traditional Medicare. Although not technically a group practice, IRMA’s infrastructure and relationship to physicians permitted it to become accepted as one of the PGP demonstration sites.

Program Development

In the mid-1990s, IRMA had a formal relationship with the local IPA (Middlesex Professional Services) and entered into capitation contracts with major insurers, including Aetna, Anthem, and Connecticut Care, on behalf of the hospital and the IPA. IRMA even negotiated global capitation contracts that included prescription drugs for commercial lines of business. The PHO not only was a mechanism for contracting with managed care but also was to be the organization that helped the various components of the delivery system manage financial risk. As the capitation contracts transitioned back to fee-for-service, the formal relationship with the IPA was terminated. Nevertheless, there was still a perceived need for an organization to support both the health system and the individual physicians in managing care on behalf of the community. IRMA was then free to concentrate on medical management, public reporting, and supporting the hospital and its physicians in pay-for-performance activities.

In the late 1990s, the genesis of the initial disease management program for adult asthma was for risk contracting using capitation but quickly meshed with related projects supporting the hospital’s mission and not-for-profit status. Although Middlesex County is a relatively affluent area without many uninsured patients, a significant number of uninsured patients who
did receive care at Middlesex Hospital, whether in the ED or as inpatients, had chronic diseases such as asthma; the hospital was caring for these patients and absorbing the costs. Disease management, then, was seen as a way to reduce hospital and ED use, thereby serving to satisfy the hospital’s mission and community benefit obligations while reducing the uncompensated care burden for the hospital. The initial asthma disease management development was supported solely by IRMA but subsequently was supplemented by grants from local agencies as well as the Healthy Communities Access Program in the Health Resources and Services Administration, an agency in the U.S. Department of Health and Human Services.

With the success of the adult asthma disease management program, the asthma program was expanded to include children, including collaboration with school-based health centers. Part of the rationale of expanding the program to children was the perception that pediatricians simply did not have the time to perform the range of activities that a care manager nurse could do. Still, many pediatricians initially resisted the program. IRMA worked hard to demonstrate that the program did not interfere with physician autonomy but rather provided enhanced support to pediatrician practices. With a heavy emphasis on physician communication and the demonstration of program benefit, the initial resistance switched to overt support.

At the same time the IRMA-administered, internal asthma (and subsequently diabetes) disease management program was being implemented, the objective of achieving clinical integration across the system was becoming important for the privately insured population. Based on the initial successes with asthma and diabetes, Anthem, a large insurer that contracted with providers through IRMA, gained confidence in IRMA’s ability to perform disease management and developed a three-year Clinical Quality Partnership supporting both asthma and diabetes programs as well as related pilot chronic disease registry projects.

The decline in capitation contracting was fairly rapid in the midst of the managed care backlash in the late 1990s; by the end of 2001, Middlesex Hospital and affiliated physicians were back on various forms of FFS reimbursement. And with the end of capitation, the business case for disease management became much more difficult to sustain. Indeed, without both the external funding from Anthem and the community benefit rationale, IRMA advocates of internal disease management programs believe they may not have been able to justify the costs of administering the disease management programs in the first place. Although an internal evaluation demonstrated that both programs provided substantial clinical benefit and strong financial performance in reducing costly ED visits and hospitalizations, the programs would not have been sustainable because of the direct costs, mostly for salaries.

As with Sutter and Park Nicollet, the specific issue of hospital financing was an important consideration; in IRMA’s case, the hospital would have borne the entire expense for the program yet would have suffered financially from the reduction of inpatient days in the FFS payment environment that Middlesex Hospital, not at full capacity, then was in. Yet, in reality, the ROI analysis was not as clear-cut as this conclusion implies. For example, as noted, with a community benefit obligation and system mission to care for the uninsured, the targeted asthma program that reduced hospital use actually improved financial performance while enhancing the system’s reputation in the community.
Nevertheless, disease management that reduces hospitalization rates directly reduces hospital revenue. Medicare’s PGP demonstration offered the impetus for initiating CHF disease management. The diabetes and asthma programs were fully developed and accepted by physicians and the community at large. Because CHF programs have demonstrated the ability of disease management programs to show short-term savings, adding such a program was a logical next step. Because the hospital’s occupancy had gradually increased to 90 percent and higher over the previous decade, there were no concerns about decreasing admissions for CHF. Deferring admissions for asthmatics, diabetics, and CHF patients simply made room for other admissions.

The Programs

IRMA administers its own disease management programs for asthma (expanded to include children), smoking cessation, and diabetes, and has recently initiated a disease management program for CHF targeted to the sicker CHF patients who have experienced frequent hospitalizations. IRMA also manages reimbursable diabetes education programs, and an anticoagulation disease management program is under discussion. With its growing expertise in performing disease management, IRMA became the first provider-based organization to receive National Committee for Quality Assurance (NCQA) accreditation for disease management in 2003—in their case, for asthma and diabetes.

In contrast to external disease management programs that typically mine administrative data to generate the list of patients who would benefit from their intervention, IRMA’s internal disease management programs rely mostly on physician referrals, using a simple referral form, from the network of practicing physicians. IRMA’s experience has been that without positive physician encouragement, patients rarely agree to “enroll” in the program, even though enrollment does not involve patient cost-sharing. Eligibility is severity-based; that is, limited to patients who are not successfully managing their disease for any reason (this includes ED use or hospitalization as a marker of failed self-management).

A crucial requirement of the disease management approach is the IRMA commitment that the program will not burden physicians or their office staff. The program sees its role as complementary to the physician, providing chronic care management support that the physician’s office is not able to provide directly. Middlesex Hospital has a certified family practice residency program that has resulted in placement of about 45 family physicians in the community. These physicians have tended to be major patient referral sources who appreciate the added value offered by IRMA. Yet many community physicians refer patients to IRMA for disease management because of IRMA’s priority on designing their programs to interact smoothly with medical practices of various kinds.

In contrast to Sutter and Park Nicollet, except for the physician practicing at the hospital, the physicians do not participate in a group practice and do not share a common electronic health record. The hospital is able to provide hospital information, such as discharge summaries and hospital lab tests, through a Web-based portal that all physicians are able to access; however, most of the community physicians still use paper office charts. Accordingly, the IRMA disease management program involves paper-based referrals and care summaries as well as face-to-face and telephone communication between nurses and physicians.
The program’s “care managers” typically are experienced nurses who conduct an initial face-to-face patient assessment on referred patients. To supplement the assessment, the care managers often access hospital records and may discuss the patient with the referring physician. After their initial assessments, the care managers send a semi-structured note back to the referring physician with recommendations about the support they can provide the patient. The care managers think they often inform physicians about aspects of patients’ situation that would assist physician decision making; for example, the presence of underlying depression and medication compliance issues.

IRMA staff consider the nurse-physician communication a crucial part of the program and one of the aspects of the program that distinguishes it from third-party disease management. Another distinguishing feature is that in the asthma, diabetes, and smoking cessation programs, care manager-patient interaction is mostly face-to-face, rather than by phone. Care managers sometimes accompany patients to office visits with their principal physicians, especially for complicated cases; that is, patients with complex and immediately life-threatening clinical problems. With the emphasis on these patients, the apparent condition-specific, disease management approach becomes similar to case management.

Telephone follow-ups are performed, and home visits may be conducted, for example, for asthmatics to perform an environmental assessment and for diabetics who are not mobile. Still, the basic approach relies on face-to-face encounters. Care managers write up their encounters and provide a hard copy to the patient’s physician.

Care manager nurses carry about 80 active cases per full-time employee.

As noted, in contrast to most third-party disease management programs, IRMA’s approach emphasizes the role of the primary care physician. These physicians are not formal members of a multi-disciplinary team; rather, IRMA nurses interact with physicians who continue in their own practices. Practicing physicians submit a formal referral form with relevant clinical information, receive copies of the initial disease management assessment and every subsequent encounter—including self-care follow-up assessments—discuss difficult cases with the care manager on the phone, and at times may also be visited by the care manager, sometimes with the patient.

Care managers do not have authority to modify medications on their own; however, self-care instructions, which the physician must approve, may call for dosage modifications based on clinical status, as is common in asthma, diabetes, and CHF management. Care managers emphasize patient education and patient self-management of their condition, using formal assessment of the impact of their efforts to improve patient self-management skills.

Lessons Learned and Policy Implications

IRMA has found that the PHO-like organization permits disease management approaches to certain conditions to be much more relevant to practicing physicians and their patients than distant, telephonic disease management carried out by plans or disease management vendors. Although it lacks some of the data-mining sophistication that plans can bring in selecting patients for disease management, IRMA has found that physician referral is not only a good source for patient identification but also provides a way for physicians to become engaged in the disease management endeavor, not as an active member of the team but rather as an interested “customer” for the care managers.
One particular attribute of the disease management programs appears crucial in providing ongoing support for continuation and, now, with new impetus from the PGP demonstration, to other conditions. Simply, most primary care physician practices are too small to support the requisite disease management infrastructures to carry out the range of functions offered by a centralized disease management program. IRMA professional staff members see themselves as adjuncts to Middlesex County physicians and therefore can develop a natural relationship with the patient while maintaining the trust of the physicians. Similarly, patients have an enhanced sense of comfort because they view the IRMA disease management nurses as extensions of the physicians’ office. In the unique environment in which hospital and physicians remain partners rather than competitors, the hospital is in a position to subsidize some chronic care activities.

An added facilitator that has supported IRMA-based disease management is that busy physicians were not supportive of the plethora of third-party disease management programs sponsored by the largest health plans. Thus, although there are similarities in the actual disease management activities that IRMA nurses and vendor nurses carry out, IRMA believes these relationships create a different dynamic than that produced by multiple health plans with their own disease management programs.

IRMA is a disease management model that supports physicians in independent practice rather than an integrated medical group. Working with dispersed physicians working in their own practices creates special challenges. Affiliated physicians do not share an electronic health record, and few individual practices have EMRs. Further, without access to the kind of enrolled population identification that health plans possess, IRMA does not have a complete registry of at-risk asthmatics and diabetics to identify a population on whom to target disease management. Thus, IRMA cannot easily measure population-wide outcomes for their disease management programs. In having robust claims data for populations of patients, health plans and vendors doing disease management have important advantages over what IRMA can do with disease management approaches.

Financial support for the disease management programs remains an ongoing challenge despite the apparent positive ROI for the asthma and diabetes programs.

Even though the disease management programs have become “part of the fabric” of the delivery system, as evidenced by the pride shown over attaining NCQA accreditation, the direct cost of the programs (no longer subsidized by health insurers) is always an issue in the annual budget review process, and philanthropic support remains an important funding source. Benefiting from healthy margins, after initial reluctance, Middlesex Hospital has been willing to invest in IRMA chronic care management activities to support physician practices and as part of its community mission. Still, because of concerns about direct costs of administering disease management and the potential loss of hospital revenue, the selection of disease management initiatives have been limited to a few, although the potential for sharing savings with Medicare under the PGP demonstration has broadened the scope of activity.

IRMA does not have programs targeting frail patients with limitations in activities of daily living, as Sutter does, because of the lack of funding to defray the costs. A brief, very small trial of “complex care management” supported by an
external grant in 2002 was not extended. The Middlesex Hospital System does have a home health agency in-house so that some case management services are supportable. Nevertheless, because Medicare reimbursable home health services require patients to be “homebound,” the costs for services for many of the potential patients that case management targets cannot easily be recouped.

**Billings Clinic**

Billings Clinic (formerly Deaconess Billings Clinic) is an integrated, community-owned, not-for-profit organization serving a metropolitan and surrounding rural area in eastern Montana. At its core is a multi-specialty group practice of more than 200 physicians (a quarter of whom are in primary care) and non-physician providers. The downtown Billings Clinic campus includes a 272-bed hospital with a 14-suite Family Birth Center and a 15-bed Transitional Care Unit and the region’s largest multi-specialty group practice. Branch clinics include Billings Clinic Heights, Billings Clinic West, the Wellness Center, and Aspen Meadows Retirement Community. Primary and specialty-care clinics are located in Bozeman, Colstrip, Columbus, Forsyth, Miles City, and Red Lodge, Montana, as well as in Cody, Wyoming. All physicians are employees of Billings Clinic, with the exception of a 14-member anesthesia group that provides exclusive services at the main hospital. Billings Clinic also manages seven critical access hospitals in the region and plans to offer its full information systems capabilities to these small facilities. Consistent with the group practice environment, the integrated delivery system does have an integrated EMR that joins the various system components and the new chronic care management support activities.

**Program Development**

Diabetes care is a particular challenge in rural areas, where primary care practices have limited resources, typically lack clinical information systems, and experience relative isolation from educational programs and diabetes expertise. A collaborative effort between diabetes prevention and control programs in Montana and Wyoming and the University of North Dakota was established in the late 1990s to provide support to rural and other primary care practices. At Billings Clinic, physician CEO Nicholas Wolter was an important champion for participation in what was called the Diabetes Quality Care Monitoring System (DQCMS). DQCMS is an office-based computer program that was designed to permit clinicians to monitor and evaluate the level of care provided to diabetics and to identify areas for quality improvement activities. It provided programmed reports to help rural physicians identify patients in need of secondary preventive care and clinical follow-up. Wolter was able to obtain a grant from the State Center on Aging to develop a diabetes registry in association with the participation in DQCMS.

More recently, the Mountain Pacific Quality Health Care Foundation, the Quality Improvement Organization (QIO) that serves Montana and other states, has provided a tool to help physicians manage in their offices the clinical aspects of care for diabetics. Physicians receive printouts when the patients come in that shows whether patients are up to date on particular measures that are derived from American Diabetes Association guidelines; for example, whether patients have had annual HbA1C tests. In short, these programs targeted to physicians in rural practices produced the important orientation to the clinical care of diabetics as the initial focus of chronic care activities for the region in general and for Billings Clinic in particular.
Given this external programmatic focus, Billings Clinic initially has focused its internal chronic care activities on care for diabetics. The Billings Clinic diabetes registry initially identified 15,000 diabetics cared for by its system. Subsequently, when the Cerner EMR came on line in July 2004, the list was winnowed down so that about 7,000 diabetics, about 70 percent of whom are in the greater Billings area, are eligible for diabetes disease management, regardless of their insurance. Many fewer are actually in the program because of administrative manageability and finances.

The history of CHF disease management followed a different course. A primary motivator was the recognition in about 1997 that the hospital was losing about $2,000 per admission for CHF, largely attributed to the above average severity of illness with which many CHF patients presented to the hospital. The initial push actually came from the medical staff generally and a cardiologist champion who was aware of developing disease management programs elsewhere. The initial CHF activities emphasized enhanced inpatient management of these patients, many of whom were found to have important comorbidities; this initial focus was on “cost avoidance.” Early champions recognized that posthospital care could affect the severity of illness—and costs—for patients who inevitably would experience subsequent hospitalizations.

The Programs
Located in a small city and surrounding towns in a very rural state without much managed care, Billings Clinic functions in a near total fee-for-service payment environment. Yet the hospital is almost always at or near full capacity, so the negative business case that others have reported restrains investments in chronic care management activities is not significant here. Chronic care management program advocates within the system have to justify the direct costs associated with the care management programs themselves but do not have to confront a concern about a loss of hospital revenue. In this relatively benign fiscal environment, Billings Clinic can be ambitious in developing new programs, many of which are more traditionally associated with group practices.

As an integrated delivery system, including the hospital and medical practice sites throughout the region, Billings Clinic operates programs that affect the care of patients with chronic conditions and frailty. Some of the activities are conducted in more traditional specialized clinics with physicians and other health professional staffing. For example, there has been a Senior Assessment and Frail Elderly Clinic under the director of geriatricians. The clinic is developing a Five Wishes/End of Life/Palliative Care program in conjunction with a local hospice with which Billings Clinic has had a long-standing relationship. Billings Clinic also has a Medication Assistance Program and an anticoagulation clinic among other activities that affect the care of patients with chronic conditions. Participation in the PGP demonstration has furthered interest in developing these programs.

The focus here is on disease management programs that have much in common with those of the other health care systems interviewed. Billings Clinic supports disease management programs for diabetes, CHF, COPD and asthma, and coronary artery disease, with the first two being the earliest and largest. With Park Nicollet and IRMA, recent expansion of these programs has been facilitated by Billings Clinic’s participation in the PGP demonstration, which mitigates the negative business case for supporting personnel who do not generate revenue but may reduce revenue elsewhere in the system; for example, for hospitalizations. Because Medicare reimburses
for diabetes education, there is a program, with certified educators, for diabetes education separate from the diabetes disease management program that has been evolving.

Part of the impetus for developing internal disease management programs was the perception that patients do not pay attention to a distant disease manager associated with telephonic disease management provided by health plans directly or health plan vendors. Champions within Billings Clinic believe a face-to-face relationship is necessary for disease management to achieve its potential. In this model, patients continue to see their regular physicians, who typically are family physicians and general internists. When logistically possible, the diabetes care manager nurses are co-located in the group medical practices in the various sites in Billings and the other towns where Billings Clinic has primary care physician practices.

A major focus of the diabetes disease management program relates to supporting and improving the care provided by primary care physicians. Relying on a diabetes disease registry of about 4,000 patients that is generated from the electronic medical record, nurse “care managers” are able to manage the registries with a focus on improved principal, usually PCP, physician performance. A major activity is analysis of and feedback to individual physicians on their performance on measures of diabetes care, based on accepted clinical practice guidelines. Physicians are provided American Diabetes Association (ADA) guideline updates every year. These guidelines form the basis for the measures that physicians are evaluated against. For example, every primary care physician receives a periodic report that provides a listing of his or her diabetic patients and for each patient a compilation of blood pressure, hemoglobin A1C level, lipid levels, and whether they have had periodic eye and foot evaluations, among other measures. The data is also aggregated for each physician and his or her performance against ADA recognition goals and peers.

An additional activity relates to providing physicians relevant, patient-specific information of compliance with guidelines available for each patient visit. The goal is to have the EMR include specific disease management modules, such as for diabetes, CHF, coronary artery disease, etc., that provide point of care “alerts” permitting physicians to easily identify and correct gaps in guidelines-based care for diabetes, especially. The clinic also emphasizes enhanced education to physicians, other professionals, and patients on important aspects of diabetes care, such as eye complications, rotating topics quarterly.

An important part of the diabetes program is physician generation of referrals to the nurses, who then provide the disease management intervention. For diabetes, the program relies mostly on face-to-face nurse visits with patients and telephonic follow-up. Another innovation, which takes advantage of enhanced information systems’ ability to sort clinical data contained in the electronic medical record, is the use of a Diabetes Patient Report Card, developed for each patient in the program. The report card contains a side-by-side view of patient-specific data on important diabetes measures and attempts to provide the information in a personalized way, for example, “A for A1C,” “B for blood pressure,” etc. Patient-specific goals are established through assessing information from the EMR.
The Billings Clinic approach to disease management for CHF differs from that used for diabetes in some important aspects. Whereas the latter emphasizes physician awareness of patient’s clinical parameters against guidelines, patient (and physician) education, and some interaction with a nurse disease manager, CHF is viewed as a condition in which active monitoring of patient self-reported symptoms can lead to altered treatment to prevent clinical deterioration and avoidable hospitalizations. The initial CHF disease management approach was based on what came to be called internally “plain old telephones” or “POTs” — nurses were given a caseload of patients to phone periodically.

Patients who were stable for a year were discharged from the program, with higher-risk patients, including those with devices, such as intra-cardiac defibrillators, remaining for the duration. The program evolved based on internal assessment that patients in the program experienced an all-cause hospitalization reduction of about 20 percent. Subsequently, internal evaluation has demonstrated that the hospital now makes money on every CHF admission because the need for intensive care for admitted CHF patients has been significantly reduced.

As Park Nicollet has done, Billings Clinic recently bought Pharos Systems’s Tel-Assurance program. Part of the impetus for the change from POTs to Tel-Assurance is that the program has been receiving physician referrals throughout a region that extends hundreds of miles, thereby making efficient telephone communication a necessity.

In Billings Clinic’s application of the Tel-Assurance program, patients either call or log in each morning to a secure, telephonic or Web site portal that collects data from them such as weight and symptoms based on responses to a few questions. Patients in return receive a welcome message customized for Billings Clinic that gives the platform a community-based feel. Patients also receive educational support messages and, periodically, screening questions for depression and sleep apnea. Each day, nurses access the patient-supplied information to identify patients with worsening conditions against established, patient-specific protocols. The nurses are permitted to intervene directly with patients and may modify medications, using established protocols. If a patient’s condition worsens, nurses contact the patient’s primary physician with clinical information that permits the physician to decide on a course of action.

The Tel-Assurance program represents a major departure for Billings Clinic in its approach to telephone-based disease management. Until adopting the new approach, nurses handled a caseload of about 80 CHF patients and were on the phone frequently with enrolled patients when using regular telephone contact. At that time, the program served about 300 CHF patients. Tel-Assurance is designed to permit nurses to manage more by exception; patients who are doing well do not need a call-back. Accordingly, projected caseloads per nurse have risen to about 300, thereby permitting a major program expansion.

However, despite much greater reliance on telephone contact, now facilitated through the Tel-Assurance program, the program can still be differentiated from third-party disease management because of the personal contact with a Billings Clinic-based nurse that is established at initial referral from the physician. Education by the CHF clinic nurse is extensive and face-to-face, often in the hospital during an acute CHF admission. The Billings Clinic-based nurses can also become personally involved when end-of-life issues arise, facilitating discussions between the patient and family with the patient’s primary physician and sometimes generating a referral to palliative care or a hospice.
The program is also moving toward greater reliance on certified nurse practitioners, rather than trained registered nurses, again, primarily for reasons of Medicare reimbursement policy. Nurse practitioners working independent of a physician can be reimbursed at 85 percent of the physician rate for their office visits. In addition, nurse practitioners would probably be able to respond directly in more situations than a registered nurse would, such as in altering a medication regimen based on evidence-based guidelines.

**Lessons Learned and Policy Implications**

As an integrated, multi-specialty medical group, Billings Clinic has some advantages in supporting small-town and rural physicians with chronic care programs. Often, educators and case managers see patients in the same locations as the primary care practices. The diabetes disease management program emphasizes the role of the physician in achieving compliance with evidence-based practice guidelines and provides both data profiles and real-time reminders to try to improve physician performance.

In contrast, for CHF, the clinic is moving more to a telephonic contact model but now with use of a product that permits patients to log in either by phone or email daily with their clinical status for easily measurable or reported parameters of care. Although increasingly relying on telephone contact, the fact that each Billings Clinic CHF nurse is connected with patients’ physicians appears to facilitate communication with the patients’ primary care physicians when needed. Further, the ability in most cases for the nurses to establish a personal relationship with patients based on initial and as-needed face-to-face contact differentiates the approach from third-party disease management.

The FFS payment environment supports the chronic care programs well but restrains how robust the chronic care management programs can be. Absence of reimbursement for nurse-patient “telehealth” communication is a specific limitation that affects the size and scope of the programs, especially for rural practices and patients, who cannot rely on face-to-face interactions but must rely on telephones (or email).

Along with Park Nicollet and IRMA, Billings Clinic believes the PGP demonstration payment approach has provided an important impetus to expansion of chronic care management approaches. Similarly, the health systems that have an important hospital component go through a difficult process of assessing how to absorb the expected decrease in hospital revenue from decreased admissions, especially as a result of heart failure programs. However, as others have reported, Billings Clinic believes that CHF disease management that reduces hospitalizations frees beds for patients with more “lucrative” diagnoses and permits a shorter length of stay for CHF patients who are admitted. In short, the business case, even in FFS environments may support provider systems investing in disease management rather than leaving it to health plans and distant (which is often the case in Montana) third-party disease management vendors.
Care Level Management

Care Level Management (CLM) was founded in 2000 by an internist/hospitalist and an owner-executive of a home infusion company. Although CLM is a vendor, it is a physician-centric model that could be adopted by provider organizations either staffing the activity directly or contracting it. Its markets include counties around Los Angeles, San Francisco, San Antonio, Tampa, Orlando, and Phoenix, as subcontractors to managed care organizations, especially Medicare Advantage plans with large numbers of high-cost, vulnerable elderly and disabled beneficiaries. Health plans that contract with CLM include United Health Care, Humana, and Aetna.

Because Care Level Management’s business is a vendor relationship with health plans, financing does not depend on fee-for-service payments. Typically, health plans contract with CLM initially through a blend of per member per month (PMPM) payments for management services and FFS payments for actual patient home visits by so-called personal visiting physicians (PVPs), with performance incentives related to measures, such as a reduction in inpatient days. Performance incentives are given to CLM as an enterprise (but not to individual PVPs) for results on measures such as a reduction in inpatient days. Once the contractual relationship has developed and performance levels sustained for a period of time, often the payment method is altered to a straightforward, PMPM payment for all services.

Although there is a necessary infrastructure in any site, as described below, the main component of the program is employing physicians to become PVPs; thus, recruitment and retention of physicians is one critical business function that permits (or potentially could limit) CLM to expand to new sites. Having had initial success with its business model with private health plans, CLM is rapidly expanding the number of markets it can serve. Also, in 2005, CLM was selected by CMS as a demonstration program in the Care Management for High-Cost Beneficiaries (CMHCB) initiative.

The Program

Care Level Management calls its basic approach a Personal Visiting Physicians Delivery System, whereby a family physician, internist, or geriatrician makes home and custodial facility visits to designated patients, essentially being “on-call” to them at all times. The PVPs are trained at “CLM University” before starting work and are intensively mentored in the field for the first 90 days. In a stark contrast to disease management, which typically relies on both face-to-face and, more often, telephonic interactions between a professional, usually nurse, care manager, CLM relies on physicians to be the primary contact with patients, mostly through home visits. Between home visits, patients have direct cell phone access to their PVPs and nurses who work out of regional offices and maintain contact with traveling physicians through phone and an EMR. CLM has also started a similar intervention for nursing home residents. CLM is committed to the concept of “bi-directional access,” in which the physicians have as much motivation to seek access to patients as the patients have to seek access to their doctors. Many seniors typically don’t want to “bother” the doctor, so CLM “bothers” them to head off potential problems.

To an important extent, CLM’s unique, physician-centric chronic care management approach derives from the particular attributes of its target populations. Both classic third-party and provider-based disease management models described earlier mostly target patients with specific conditions, such as diabetes and CHF.
Although they usually have important co-morbidities and may experience unnecessary hospitalizations, for the most part, these patients do not have severe limitations in daily activities. Such limitations make it difficult for patients to come to medical offices even for necessary physician care, much less to visit other professionals for education or medication review.\(^8\)

Rather than avoiding this challenging population, CLM targets them for physician-based intervention. Indeed, in its health plan contracts, including those with Medicare Advantage plans, CLM targets the top 3 to 5 percent of chronic health care utilizers for intervention. CLM’s patient management approach calls for an initial comprehensive geriatric assessment by the PVP, who then determines the patient’s acuity level and performs a risk assessment, which is continually updated on the basis of subsequent home visits. The acuity assessment sometimes determines that patients do not require intensive physician monitoring, in which case, patients are continued in the program through non-physician telephone monitoring. In some cases patients are discharged back to the health plan general population, although in the CMS demonstration project they are placed in “passive-standby.” Most patients are found to qualify for ongoing follow-up through home visits.

Thus, Care Level Management’s basic approach to addressing recurrent hospitalizations and declining quality of life for vulnerable patients is to provide them a more intense form of physician care through frequent home visits and constant cell phone availability by the same physicians. Indeed, in this model, the physician herself functions as the “case manager” for her own patients. Because of the intensity of the interaction with very sick patients, panel size is limited to about 120 patients; PVPs average 1.5 visits per month to their patient panel.

The PVPs are expected to follow evidence-based clinical practice guidelines where available and appropriate. However, CLM believes there is a paucity of validated guidelines relevant to the patient population it serves and, in the absence of appropriate guidelines, relies more on physician judgment at point of care than on adherence to guidelines.\(^9\) Again, the paucity of relevant guidelines buttresses CLM’s reliance on more highly trained physicians, rather than nurses, as the frontline professionals to interact with these particularly challenging patients.

A core component of the CLM model is the mostly overlooked home visit, which can now be more efficient through relatively straightforward technology: cell phones, personal digital assistants (PDAs), and electronic medical records. CLM believes that a key success factor in its approach is the strong patient-physician bond that develops from regular home visits with the same physician. This bond typically persists until the patient’s death, often occurring at home with the PVP personally providing end-of-life care to the patient and support to the family and, when appropriate, directly addressing palliative care approaches, such as hospice care.

Although the program revolves around physician home visits, the PVPs are supported by what CLM calls nurse care managers, based in a regional office. In addition to helping maintain medical records, scheduling patients, triaging phone calls, the nurses also maintain regular phone contact with patients in periods between PVP phone calls. As a rule, the nurse care managers do not make home visits.
An important feature of the CLM program is that the home visiting intervention is usually placed on top of the regular patient-physician relationship, which usually is not formally altered. Applied mostly in health plans in which patients are expected to have a primary care “gatekeeper” physician, the PVP essentially provides another layer of care. For example, PVPs commonly assess the patient’s “medicine cabinet” and recommend substitution, elimination, and consolidation of medications, working with the primary physician. Although from a theoretical point of view, providing a separate physician to make home visits and accept phone calls might lead to care redundancy and, worse, inconsistency, if physicians in effect “compete” over primary responsibility, CLM believes that its program, in fact, complements and supports primary care physicians, much as the provider-based disease management programs purport to do.

CLM thinks physicians, in particular, are acutely sensitive to the prerogatives of patient’s principal physicians and do not threaten them. In addition, CLM believes that physicians may be better able than even highly trained geriatric nurses to identify and head off complications that would otherwise result in ED visits and unavoidable hospitalizations. Physician-to-physician communication, CLM argues, facilitates coordination and prompt action to head off deterioration in each patient’s clinical status.

Relying on physicians to perform home visits, CLM believes it is able to manage in the home acute medical conditions that normally would require hospitalization, a form of “home hospitalization.” Examples of conditions that CLM physicians treat at home include uncomplicated pneumonia, cellulitis, dehydration, and urinary tract infections, as well as exacerbations of CHF and COPD.

Lessons Learned and Policy Implications

The CLM model, in essence, provides a high-cost, complex patient with two personal physicians, an approach that might seem extravagant and one that potentially might lead to conflict among physicians. But from another point of view, one could look at the personal visiting physician as a specialist, akin to a cardiologist or surgeon, but in this case specializing in home care services for frail elderly patients. Patients with five or more chronic conditions see an average of 14 physicians in a year. Although some of these physicians, such as radiologists, provide one-time, technically oriented services, in fact, the patients whom CLM cares for already have multiple long-term physician relationships, and many of these physicians’ recommendations and treatment approaches surely overlap already. Arguably, the PVP, with an intense personal relationship with a patient approaching death, might actually lead to a reduction in the number of physicians that care for the patient, simplifying the care environment and reducing redundancy and inconsistency, even if there is some role overlap with the patient’s principal physician. That hypothesis needs to be tested.

CLM’s internal studies find a greater than a 60 percent reduction in admissions, with about 70 percent of “avoided admissions” resulting from pre-crisis interventions by PVPs to head off after-hours visits to EDs and, often, admissions. In other cases, CLM believes that the availability of 24-hour coverage by a PVP permits ER discharges to the home that otherwise would probably result in a hospitalization because the usual delivery system could not ensure the personal physician attention that these functionally impaired and clinically complex patients would need. CLM finds that the remainder of the hospitalization reductions can be attributed to reduced overall morbidity as a result of vigilant
patient interactions. Also, in coordination with discharging physicians, such as hospitalists, inpatients can often be sent home earlier when a PVP is available to see the patient in the home shortly thereafter.

These positive internal assessments will now be subject to external evaluation as part of the CMS demonstration.

Physicians are more highly paid than nurses and other professionals that are used in the some of the other programs examined. Further, these highly paid professionals have small panels of 120 patients, far less than nurse care managers manage in the disease management programs we have looked at. CLM argues simply that the complexity of these patients require the skills of a physician. The philosophy runs counter to that underlying many of the other chronic care management programs, which typically try to protect the chronic care patient’s primary physician from the clinical detail that disease managers address as well as the social, psychological, and activity-limiting problems that case managers address.

Rather, CLM believes the sickest patients—those with many interacting problems—are best served by the most highly trained professionals, namely, physicians, who, if permitted to do so, are best able to provide care for these complex patients and in the process reduce costs, mostly by averting hospitalizations.

As noted earlier, CLM contracts under various payment arrangements, in some cases, relying on billing for actual home visits, a potential approach for payers who rely mostly on FFS physician payments. In some ways the centrality of physician home visits makes application of the model to original Medicare more straightforward than if the program relied more on professionals who currently cannot be reimbursed under FFS rules. In the CMS Care Management for High Cost Beneficiaries demonstration, after an initial outreach period, the basic payment will be per-beneficiary-per-month for those beneficiaries who agree to participate, with CLM putting its administrative fee at risk and with shared savings after a savings threshold is achieved.

Washington Hospital Center Medical House Call Program

Washington Hospital Center (WHC) is a 900-bed teaching hospital that is part of MedStar Health, an integrated health care system serving Baltimore, Maryland, and Washington, D.C. MedStar Home Health system is a Visiting Nurses Association (VNA) affiliate and operates in both metropolitan areas. WHC is located in an area that is predominantly low- and middle-income and African American. It re-established a Section of Geriatrics and Long Term Care in 1999 and launched a program targeted to frail elderly patients who are essentially homebound and typically have multiple, severe chronic conditions and geriatric syndromes.

The Program

Washington Hospital Center’s Medical House Call Program serves elderly and disabled residents in eight Zip codes surrounding the hospital east of Rock Creek Park. The population served is 85 percent female and 85 percent African American and has an average age of 82. Nearly 90 percent of patients in the program are covered by Medicare, 40 percent of whom are dual-eligible for Medicaid. Financial support under a Medicaid Home and Community-Based Services Waiver for the dual-eligible beneficiaries provides important funding for the program.
The WHC Medical House Call business model also is very different from that of Care Level Management’s. As described earlier, CLM works under contract with payers, mostly receiving a PMPM payment to support its house call-oriented activities, often with performance incentives, with fee-for-service reimbursement serving as an occasional adjunct to this basic approach. In contrast, largely because there is virtually no capitation contracting in the Washington, D.C., area and, until passage of the Medicare Modernization Act in 2003, a virtual absence of Medicare Advantage plans with which to contract, the WHC program has had to grapple with fee-for-service service reimbursement, mostly from Medicare and Medicaid.

WHC supported the initial staffing, and philanthropy has provided ongoing support for building the program. In addition, the program has received a Home and Community-Based Services Waiver contract under Medicaid section 1915(c), which provides funding for the social workers to provide alternatives to long-term care in institutional settings. The program receives $1,800 per patient per year for applicable Medicaid patients. Without these external sources of revenue to supplement the routine Medicare reimbursements for services rendered, the program would not be sustainable in its current form. An important element of the revenue base is Medicare, Medicaid, and limited private insurance reimbursement for the actual home visits that the physicians and nurse practitioners generate. An important reason the program relies on nurse practitioners, rather than trained geriatric nurses, is Medicare’s policy of reimbursing nurse practitioners, but not registered nurses, for home visits at 85 percent of the prevailing physician fee. The program’s geriatricians also provide inpatient consultations and rounds on their own hospitalized patients, thereby generating additional revenue under third-party payer fee schedules. Administrative contracts, such as medical directorships, also support the financial health of the organization.

The program serves a population of medically complex, functionally impaired patients, similar to those served by Care Level Management. About 25 percent of the Medical House Call Program patients have CHF as an underlying condition, and 60 percent have some degree of dementia. The focus of program activity is home visits, branded by the program with the classic “house call” label. The logic for reliance on house calls is straightforward: Severe limitations of mobility, social isolation, and low income make it difficult for these patients to travel to doctors' offices or outpatient clinics, even when transportation is available.

Further, the high prevalence of dementia and the other geriatric problems makes these patients more difficult for generalist, primary care physician practices to care for. Without a regular source of care, these patients are at high risk for making ED visits and experiencing avoidable hospitalizations. Patients typically are referred to the program by word of mouth, whether by other patients, home health agency staff members, or other WHC departments, such as the ED.

The WHC house call program serves about 550 patients. The practice is divided into teams, each consisting of two geriatrician physicians, two nurse practitioners, one medical social worker and two care coordinators. The care coordinators handle large numbers of phone calls and oversee the electronic medical record that all team members use. The two teams call upon additional personnel who are not on the house call program staff, including a clinical social work therapist, a community pharmacist, and staff from the local VNA.
The core group and the other professionals function as a non-hierarchical, multi-disciplinary team. I attended a routine team meeting that included three geriatricians, two nurse practitioners (two others were in the field), two social workers, a VNA liaison nurse, an office-based nurse who manages an anticoagulation program, a clinical psychologist, a community pharmacist, a community outreach worker, and a medical resident rotating through for the month. The team reviewed the status of patients who were experiencing clinical, social, or other problems that needed attention.

Case examples of the patient problems addressed during the team meeting demonstrate the major difference between this target population and those typically served by disease management programs. They display complex interactions of clinical conditions with social, environmental, and financial aspects of care.

- A patient who is bed-bound, yet living at home, as a result of severe multiple sclerosis, with depression and recurrent fecal impactions.

- A patient with multi-infarct dementia who needs frequent bladder catheterizations and has a history of frequent urinary tract infections.

- A 92-year-old with moderate dementia who lives alone and was eligible only for eight hours per day of a health aide under Medicaid rules.

- A patient with history of multiple strokes, secondary to hypertension; asthma; and recurrent sinus infections and severe allergies exacerbated by carpet mold. The patient lacked both the financial resources and competence to remove the offending carpets.

- A 99-year-old with hemiplegia (partial paralysis) from a stroke who lives alone and needs a personal health aide. The issue was whether she needed to move from her house to an assisted-living facility.

- An elderly male with renal failure resulting from obstruction caused by inadequately treated prostate enlargement, a seizure disorder, hypertension, evidence of brain infarcts on MRI scan, and who has continued to smoke. The patient does not qualify for Medicaid or home health services under Medicare yet needs homemaker services.

As already noted, both Care Level Management and the WHC Medical House Call Program target the highest acuity patients. Most of these patients have multiple chronic diseases, severe limitations in activities of daily living, and are at risk for avoidable hospitalization with intensive ambulatory care, which both programs believe is best carried out primarily through home visits. CLM emphasized that the availability of cell phones, PDAs, and an electronic health record has made the home visit much more viable as a substitute for office visits. WHC’s house call program emphasized that physicians and nurse practitioners can make home visits with a medical bag containing virtually every item they would have back in their medical offices. A typical WHC house call medical bag contains a portable weight scale, various sizes of blood pressure cuffs, pulse oximeter, phlebotomy kit, wound care kit, ear syringe, replacement endogastric feeding tubes, Doppler ultrasound to assess blood flow, electrocardiograph machine, and many kinds of medications.
Still, the two home visit models differ in important ways, partly because the CLM program is a vendor-based program that contracts with payers whereas the WHC program is provider-based. First, whereas the personal visiting physicians in the CLM program are adjuncts to the usual physician-patient relationship, in essence providing a form of specialty care on top of standard primary care, in the WHC program, academic geriatricians take over the role of principal physician for patients who assent to transfer of their care. The WHC program finds that community physicians typically are readily willing to give up their role as usual source of care to the house call geriatricians, both because of the complexity of these patients’ problems and the difficulty these patients have coming to physicians’ offices for care.

Second, although in the two programs, physicians care for about the same number of patients—the target is 120 in CLM and 150 to 175 in the WHC program—the professionals involved differ. In contrast to CLM, which relies on physicians to do virtually all home visits, the WHC house call teams emphasize home visits by geriatric nurse practitioners. Although the WHC team has geriatricians, nurse practitioners, a social worker, and care coordinators, the nurse practitioners make most, but certainly not all, of the home visits. On average, the nurse practitioners make 30 to 35 house calls a week, whereas the physicians make 15 to 20. The multi-disciplinary teams continually evaluate patients’ conditions to decide which professional is most appropriate to make the next home visit. Nevertheless, the geriatricians do see all patients periodically on house calls. The geriatricians share night and weekend calls for the patients on the team but do not routinely make after-hours home visits, a core part of CLM’s approach. The physicians and nurse practitioners average about one “urgent” house call per day.

Third, CLM promotes “home hospitalization,” that is, intensive care in the home as an alternative to hospitalization for relatively straightforward conditions that normally require hospitalization. The WHC program physicians, who are dependent on FFS reimbursement from Medicare and Medicaid, think that they could provide similar care for patients with conditions such as simple pneumonia, cellulitis, chronic osteomyelitis, and dehydration but do not do so largely because Medicare does not reimburse for providing parenteral antibiotics and other medications in the home, except for patients eligible for home health services.

**Lessons Learned and Policy Implications**

Although reimbursement for home visits provides core funding for the WHC Medical House Call Program, as noted, it is not sufficient to sustain the program. Medicare policy does not cover the costs of travel time, which is inevitable in a house call program, and does not reimburse for telephone time, which, although not emphasized, still requires professional time with patients and their families. In addition, neither Medicare nor other payers reimburse for team meetings or case management services. The program would not survive on reimbursements for home visits alone.

In addition, and importantly, the hospital itself has provided funding to the program. Again, the conventional ROI analysis would produce a negative business case for supporting a program, which, among other outcomes, decreases hospitalizations. However, offsetting that basic negative financial reality are additional factors that mitigate the negative business case. The WHC experience caring for very complex patients has been that having a dedicated geriatrician providing ongoing care to patients as part of a well-structured home care program results in shorter lengths of stays for patients who inevitably will...
be admitted, and fewer than 5 percent require Intensive Care Unit services. Thus, although the number of admissions has decreased, the length of stays for those patients who are admitted is shorter and less costly, turning what had been unprofitable stays into profitable ones.

Furthermore, the hospital has valued the reputational benefits of the program that results in patients transferring their care from physicians using other hospitals in the community to WHC-affiliated geriatricians in the house call program. Even providing targeted geriatric team care that aims to keep patients functioning in the community, the physicians in the program do admit about 100 patients per physician each year. Many of the hospitalizations are for generously reimbursed specialty services. Thus, the hospital gains by having patients transfer their usual source of care to WHC-affiliated physicians.

The WHC Medical House Call model in many ways is closest to that of the Chronic Care Model based in a multi-disciplinary team, including the active participation by patients’ regular physicians, in this case, geriatricians. The focus on patients with severe functional impairments, often including dementia, and the program commitment to home visits distinguishes it from those programs that care for patients with one of only a few chronic conditions and are able to travel to the office for their care. An important issue that would affect expansion of this approach is whether there are enough physicians who possess both the skills in geriatric care and the interest to serve this very challenging patient population and would be willing to participate actively on non-hierarchical teams of diverse health professionals.

**MDxL**

MDxL is a physician-network management company with headquarters in Springfield, Virginia, whose primary objectives are to have its network of physicians see “admitted patients” promptly in emergency departments to avert hospitalization in some cases and to take over responsibility for inpatient care in other cases in order to decrease length of stay and improve quality. MDxL contracts with health plans, which have a financial interest in reducing avoidable hospital stays. Established in 2001, MDxL now contracts with four health plans serving the Washington, D.C., metropolitan area. Contracts cover ED calls for ten Washington-area hospitals, mostly in the nearby suburban counties in Maryland and Virginia.

Most health plans that had been in the predecessor program to the Medicare Advantage program were pulling out of their markets just as MDxL was founded, so the organization’s experience with Medicare beneficiaries has been limited. Further, the program does not specifically target patients with chronic conditions. Indeed, the focus of MDxL’s activities is to change the nature of ED care for patients presenting with acute problems that often result in hospitalization. The program attempts to avert hospitalizations for patients who can safely be managed as outpatients and, unlike the other programs examined, does not specifically focus on enhanced patient management for patients with chronic conditions.
The Program
After an emergency department physician has decided that a patient with particular diagnoses needs to be admitted as an inpatient, by contract she is obligated to report the clinical details to an MDxL triage nurse. The nurse, in turn, contacts a network specialist physician with expertise relevant to the admitting diagnosis, who is expected to come promptly—within two hours—to the ED to evaluate the patient before the actual admission occurs.

For many diagnoses, such as chest pain “rule-out” myocardial infarction, MDxL has found that the specialist evaluation in the ED has resulted in a high rate of averted admissions as patients either receive alternative diagnoses or are safely redirected for an ambulatory evaluation. Further, MDxL’s internal evaluation finds that admitted patients may often be managed as inpatients more efficiently and quickly, with reduced lengths of stay because care, including both workup and treatment, is started promptly in the ED, and the inpatient care is provided by the specialist physician rather than a general hospitalist or community practice-based generalist.

The leading condition for a non-Medicare population of patients for which MDxL physicians have been consulted has been chest pain (25 percent of the total), which commonly occurs in patients who do not have the range of chronic conditions we have been discussing. Nevertheless, although the majority of conditions for which they have been consulted are acute and not an exacerbation of a chronic disease, CHF, asthma, sickle cell crisis, respiratory failure, COPD exacerbation, transient ischemic attacks, and diabetes and diabetic ketoacidosis show up in the most common 30 diagnoses that constitute the patient load MDxL has had in its brief existence. Presumably, the percentage of diagnoses representing exacerbations of chronic conditions would be much higher if the program were serving an older, Medicare population.

MDxL’s overall rate for averting scheduled ED admissions overall is about 20 percent. For patients with chest pain whom the ED was ready to admit as inpatients, the deferral rate has been more than 50 percent. In essence, 24- to 36-hour admissions to uncover non-cardiac causes of chest pain have been converted into a comprehensive ED examination and testing by a specialist, in the case of chest pain, usually a cardiologist. For chronic conditions such as CHF, asthma, diabetes, and COPD, MDxL has found that the rate of hospitalizations averted is much less, in the range of 6 to 12 percent. These findings are not inconsistent with the observations of some of the other programs studied here that early clinical detection and active patient self-management during acute exacerbations of chronic conditions can avert the ED visits that often result in hospitalization.

To help reduce length of stay for admitted patients, MDxL also relies on nurse case managers located in the contracted hospitals to assist the attending physician achieve an expedited workup and prompt discharge, paying special attention to transitions, which usually with their patient population have been discharges back to the patient’s home but may also involve post-acute care facilities. MDxL attempts to provide continuity of care by ensuring that the same MDxL physician, who typically has an active practice in the community, will see the patient in the ED, during the inpatient stay as well as for initial post-acute care in the ambulatory setting while communicating with the patient’s regular physician. When the patient is stable, the patient may resume seeing her regular physician for routine, continued care. However, in some cases, patients choose to continue to see the specialist physician who took over their care in the ED.
MDxL is paid in one of two ways from the health plans with which it contracts: It either receives standard FFS payments for the physician visits that take place both in the ED and in the hospital, or it receives a global payment for a projected number of days of visits, regardless of whether and for how long the patient was hospitalized, the latter being a form of prospective payment. Physicians continue to bill the health plan to which the patient belongs for services other than the evaluation and management visits. MDxL in turn pays the physicians who see the patient in the ED an enhanced visit payment for the ED visit but reduced and declining payments for each day they see the patient in the hospital. Thus, in contrast to standard fee schedules used by health plans and Medicare, the physician payment incentives better support thorough evaluation in the ED and expedited inpatient workup.

**Lessons Learned and Policy Implications**

The MDxL program is not designed to provide the range of chronic care management support that the other programs examined attempt to do. However, many patients who present to the ED with acute symptoms have underlying chronic conditions that often are in need of attention. The MDxL model, with modification, could play a role in the continuum of care for patients, including Medicare beneficiaries, with chronic conditions and can be viewed as potentially complementary to some of the other models described.

As part of an overall system of care, prompt and expert care for chronic care patients who come to the ED with an acute deterioration of chronic conditions could play an important role. The program attempts, apparently successfully, to alter the situation in many markets where both the emergency department physicians and patients’ personal physicians, who may be consulted on the phone, agree to admit patients without thorough ED evaluations. For patients who do not have a regular physician, the MDxL program seeks to avoid the common situation in which a hospitalist or a physician selected from the on-call list similarly takes the expedient and expensive course of simply admitting the patient.

Additionally, if carefully selected, specialists are well qualified not only to ensure that patients meet applicable clinical practice guidelines but also to provide patient-specific guidance to the primary care physicians who may resume responsibility for care after the acute event resolves. And just as Park Nicollet has cardiologists staffing the CHF Clinic for complex CHF patients, the MDxL model would permit sorting of patients who have been in the hospital between those best followed by a principal physician specialist and those who are appropriately managed by a PCP.

In considering applying the MDxL model to Medicare patients and to patients with chronic conditions, the clear concern is that, although acute care for the exacerbation or complication of the chronic condition may be handled more expertly and efficiently than normal, ongoing care would become more disaggregated as more specialists are brought in to address specific clinical problems. Nevertheless, the MDxL model includes hospital-based care managers to help facilitate successful discharges and transfers. One of their functions could be to ensure a smooth transition back to a chronic care program, such as those described in these case studies, for ongoing care coordination.
Endnotes

1. However, from a financial perspective, bringing disease management “in house” created a difficult business case for performing the intervention on patients in FFS insurance arrangements; in FFS, reduced utilization meant reduced revenues. When there are capacity problems, Sutter Sac-Sierra gave priority to managed care patients for whom it is at risk.

2. The program was shaped partly by an early study that found that most patients in the Sutter Heart Failure Telemanagement Program had co-morbidities: 68 percent hypertension, 56 percent coronary artery disease, and 33 percent diabetes.

3. The negative business case is made even worse for the hospitals when the medical groups are capitated, but the hospital is paid on some form of FFS; i.e., on DRGs, per diems, or discounts off of charges.

4. Because health plans contract with Sutter at the system level, it has been operationally difficult for the plans to defer to Sutter Sac-Sierra’s internal programs by delegating chronic care programs for particular patients served only by Sutter Sac-Sierra.

5. In recent years, diabetes education by statute has become a reimbursable service that does not require qualification under the “incident-to” rules.

6. In contrast to other sites, because of tertiary care centers in nearby New Haven and elsewhere in New England, CHF patients with devices are typically managed by specialists outside of Middlesex County.

7. In contrast, the new CHF disease management program is focused on the initial few weeks after a hospitalization and relies much more on telephone patient communication.

8. When disease management patients experience a significant negative progression of their condition, their programs try to transfer them to case management if available. As noted in the introduction, the focus of case management is as much on functional, social, and emotional issues as on clinical ones; thus the orientation of case management interventions is both broader and more patient-specific than is disease management. Sutter has a nurse case manager/care coordination program addressing this population.


11. Although only some of the patients in the program technically qualify as “homebound” under Medicare definitions, thus making them eligible for home health services, the remaining patients cannot readily get to doctors’ offices or may simply choose not to go.