**The chronic care model offers a proactive, organized approach that can improve outcomes and satisfaction, but no paradigm shift comes easy.**

# Improving Chronic Illness Care:

## Lessons Learned in a Private Practice

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Primary care physicians are uniquely qualified to manage chronic diseases. The defining features of primary care – continuity, comprehensiveness and coordination – match the needs of chronically ill patients.[1] Further, the large majority of the chronically ill (90 percent of patients with diabetes in the United States[2]) currently receive the bulk of their care in primary care offices.

Yet, for a variety of reasons, chronic disease care is often erratic in many physicians' offices. Consider these scenarios:

- You walk into the exam room to see a patient who has diabetes, but you can't find his lab work in the chart.
- A visit with a hypertensive patient quickly evolves into a 15-minute discussion of the problems with her teenage daughter.
- You finish treating a patient for an acute problem and then realize she hasn't had a diabetes checkup in more than a year.
- A patient with asthma who was recently hospitalized continues refusing to use his inhaled steroids, and it's just a matter of time before he's hospitalized again.

Sound familiar?

Three years ago, Family Physicians of Western Colorado, a 31-year-old, 14-physician practice, was offered the opportunity to implement the chronic care model. The proposal came from a strange bedfellow – our local, nonprofit, fee-for-service, health maintenance organization, Rocky Mountain Health Plans

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(RMHP), which was founded in 1974 with significant physician input. The health plan's initial goal was to facilitate the medical care of underserved patients, but it now offers commercial, Medicare and Medicaid plans and is the largest health insurance provider in Grand Junction.

This article offers a nuts-and-bolts description of our implementation of the chronic care model, including its effects on our patients and their clinical outcomes as well as its effects on our physicians and staff. It also outlines the economic realities of adopting the chronic care model in a private practice.

## The chronic care model

The chronic care model was developed during the 1990s by Ed Wagner, MD, MPH, and colleagues at the MacColl Institute for Healthcare Innovation and Group Health Cooperative of Puget Sound, a staff-model health maintenance organization in Washington. The model's premise is that the processes physicians use to provide care for acute conditions are poorly designed to care for chronic illnesses. As a result, chronic illness care is often a poorly connected string of episodes initiated by patients.[1] Wagner and colleagues have described the phenomenon, well known to family physicians, as "the tyranny of the urgent."[3]

The chronic care model takes a more proactive, organized approach and requires that physicians develop systems in their practices that include these elements:

- Productive interactions between informed, motivated patients and prepared physicians;
- Self-management support that empowers patients to take greater responsibility for their own health;
- Decision-support tools that assist physicians and staff in providing the recommended care;
- Clinical information systems that track the care of individual patients as well as populations.

In addition, the chronic care model requires health care organization buy-in and physician incentives that promote quality chronic illness care.

## Implementation

Our first steps in initiating the chronic care model for our diabetes patients were selecting a volunteer physician champion (author PJM) and hiring a registered nurse case manager to help our busy staff make the transition to this new way of providing care. At this same time, we were converting to electronic health records (EHRs), which also represented a significant paradigm shift.

In the late spring of 2002 over an eight-week period, the physicians and key staff met for four hour-long meetings with the chronic disease population specialist for the health plan (author NBM). The physicians were incentivized $100 per session to attend, and turnout was excellent. These were four spirited hours during which the group struggled with the angst of implementing a fairly radical change in how we were going to care for our patients with diabetes.

After sufficient discussion and planning, we moved forward with implementation:

**1. Setting goals.** Goal setting is crucial in any improvement effort, as it helps a practice judge whether its actions have been effective.

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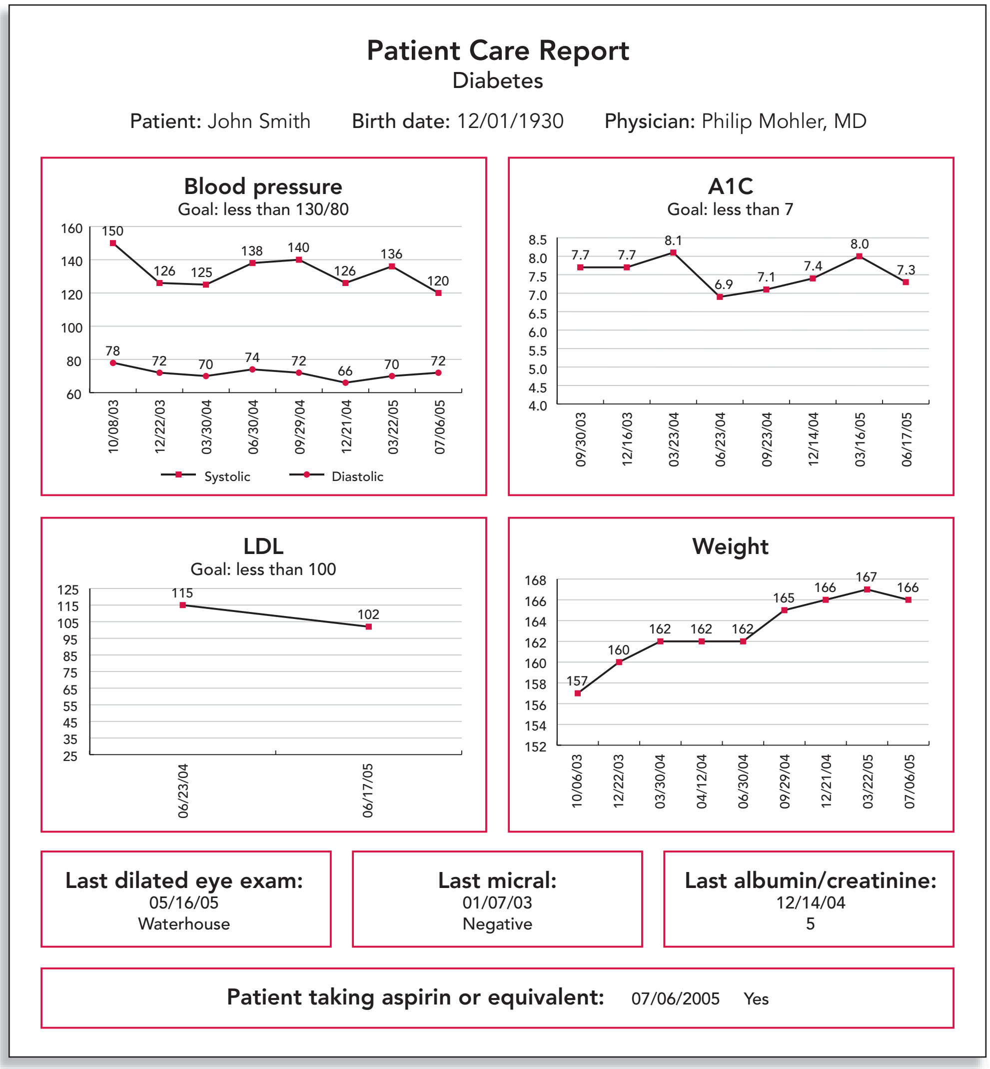
Chronic illness care is often disorganized and can be described as "the tyranny of the urgent."

The chronic care model offers a proactive approach that supports the physician and engages the patient.

Implementing the chronic care model is a significant paradigm shift that requires a physician champion and physician buy-in.

## PATIENT CARE REPORT

A one-page report generated from the practice's patient registry gives physicians a quick overview of the patient's diabetes-related measures and helps motivate patients.



### Patient Care Report
Diabetes

**Patient:** John Smith **Birth date:** 12/01/1930 **Physician:** Philip Mohler, MD

**Blood pressure**
Goal: less than 130/80

**A1C**
Goal: less than 7

**LDL**
Goal: less than 100

**Weight**

**Last dilated eye exam:**
05/16/05
Waterhouse

**Last micral:**
01/07/03
Negative

**Last albumin/creatinine:**
12/14/04
5

**Patient taking aspirin or equivalent:** 07/06/2005 Yes

Setting goals related to chronic disease care will help a group determine whether its actions have resulted in improvement.

A registry allows a group to keep track of its patients with diabetes, along with their key health measures.

Registries can enable a practice to quickly generate patient care reports, physician performance reports and patient reminder letters.

Our group struggled with setting goals for our diabetes patients but finally agreed on six:

- At least 90 percent of patients should be taking aspirin.
- At least 90 percent of patients should have had an eye exam in the last 14 months.
- At least 90 percent of patients should have had their urine albumin/creatinine ratio checked in the last 14 months.
- At least 30 percent of patients should have a blood pressure reading of < 130/80 in the last six months.
- At least 75 percent of patients should have an LDL of < 100 in the last 14 months.
- At least 70 percent of patients should have an A1C of < 7 percent or, for patients with a baseline A1C, a 1-percent decrease in the last six months.

In retrospect, review of the Diabetes Physician Recognition Program Web site (http://www.ncqa.org/dprp/dprpfaq.htm) would have saved some frustration and helped us create more realistic goals.

**2. Establishing a registry.** With the help of health plan staff, we set up a registry for our patients with diabetes using a Microsoft Access database. A registry is simply a method for recording who your diabetes patients are, along with their key health measures, so that you can track their care. (See "Building a Patient Registry From the Ground Up," *FPM*, November/December 1999.) At this time, we learned that we were caring for 387 patients with diabetes, less than half of whom were RMHP members. (This number would eventually double as we learned better ways of identifying all of our patients who have diabetes.)

Our registry allows us to produce two invaluable reports. First, our individual patient care report (page 52) is the element of the chronic care model that our physicians most appreciate. The case manager generates this report from registry data in advance of the visit and attaches it to the encounter form. On a single page, it offers serial measurements of weight, blood pressure, A1C and lipids, plus documentation of the most recent eye exams, microalbumin testing and whether the patient is taking aspirin. It often obviates the need to refer to the patient's chart. The report is a great patient education tool, documenting their progress or lack thereof. It is also a stimulus for patient self-care. Frequently, we send patients home with the advice to display the report on their refrigerator door.

The second report is a physician report (below), which we create quarterly and distribute to all of our physicians. It ranks the physicians in the group by how well they have done on each of the six performance indicators. These reports are the focus of quarterly chronic care model meetings involving all physicians. The reports have a sentinel effect on our patient care behaviors and stimulate some friendly bantering and heated clinical discussions. For example, why can't we as a group get more than 35 percent of our diabetes patients' blood pressures to target?

**3. Testing changes.** We spent a significant portion of time planning and testing potential changes in how we would deliver care. To demonstrate to both physicians and staff that change can occur relatively painlessly, we initiated the PDSA cycle. PDSA stands for *plan* what you want to change, *do* it with a small number of interventions, *study* it to see how it turns out, and *act* on what you have discovered. This allowed us to test changes quickly on a small scale, adapt them as needed, and then gradually implement them practice-wide.

**4. Pre-planning visits.** One of our first PDSA cycles tested the idea of "pre-planning," which enables patients to complete necessary laboratory work or other testing before their scheduled appointments so that physicians have current information at the time of the patient visit, leading to more productive encounters. Most of our physicians doubted that our patients with diabetes would make an extra visit to the laboratory before their designated diabetes visit to obtain needed tests. But our PDSA cycle, done with the older patients of the physician champion, revealed that nine out of 10 patients were quite willing to get their lab work done ahead of time. Our subsequent experience has confirmed the results of this mini-study. Our patients with diabetes who had previously done almost all of their laboratory work at the time of their physician

## PHYSICIAN RANKINGS REPORT

This quarterly report helps physicians see how their performance compares to their peers on key diabetes measures, sparking lively clinical discussions at physician meetings.

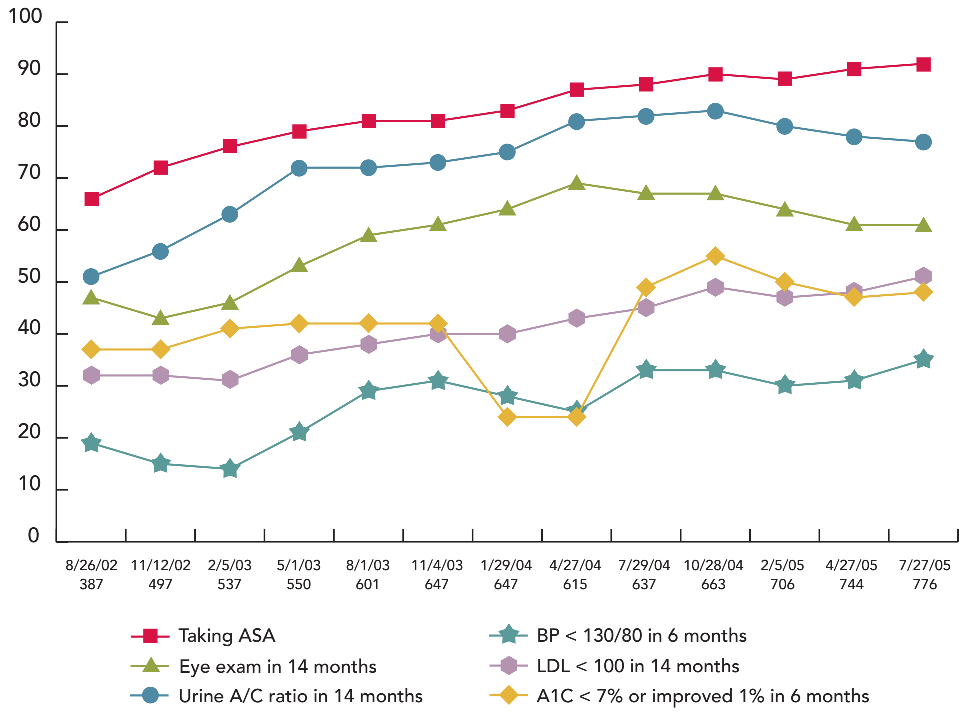
**Patient Care Registry Outcomes Report – Diabetes**
**Report Date:** 09/07/2005
**Measure:** A1C
**Group's Target Rate:** 70%

| Doctor | Total Patients | Number of Patients Who Met Goal* | % of Patients Who Met Goal |
|---|---|---|---|
| Dr. X | 4 | 3 | 75% |
| Dr. E | 68 | 44 | 65% |
| Dr. L | 59 | 37 | 63% |
| Dr. A | 58 | 34 | 59% |
| Dr. H | 37 | 21 | 57% |
| Dr. G | 29 | 16 | 55% |
| Dr. C | 52 | 27 | 52% |
| Dr. J | 69 | 31 | 45% |
| Dr. N | 60 | 26 | 43% |
| Dr. K | 30 | 13 | 43% |
| Dr. F | 96 | 41 | 43% |
| Dr. I | 108 | 43 | 40% |
| Dr. M | 68 | 27 | 40% |
| Dr. D | 26 | 10 | 38% |
| Dr. B | 20 | 7 | 35% |
| **Total Group** | **784** | **380** | **48%** |

****Goal:*** An A1C of < 7 percent.

## DIABETES OUTCOME IMPROVEMENT, 2002 TO 2005

While the group has not reached its targets for the six diabetes measures shown here, it has achieved steady improvement in each measure over the last three years.



visit are now consistently getting their studies done in advance of the visit. This has promoted increased satisfaction for both patient and physician, and has resulted in fewer phone calls and unproductive visits.

A key part of our process is sending out a pre-planning letter to patients scheduled for diabetes visits. The letter serves as an appointment reminder and encourages the patient to obtain recommended lab work before the visit and to bring all medications and current blood sugar and blood pressure readings (if appropriate) to the visit. Patients have told us they like these reminders, and our physicians agree this tool significantly improves the efficiency of office visits because patients come prepared. (To view a sample diabetes pre-planning letter, go to http://www.aafp.org/fpm/20000900/51maki.html.)

**5. Involving staff.** By engaging all staff in the chronic care model, we have become better able to identify patients who have diabetes and seize opportunities to care for them, even at non-diabetes-related visits. For example, our receptionists have developed systems to identify patients with scheduled appointments who have diabetes. Our medical assistants have developed a protocol to have all patients with diabetes remove their shoes and socks at each visit, and they set out the monofilament

The PDSA cycle is a useful tool for testing changes quickly on a small scale before implementing them practice-wide.

Pre-planning enables more productive visits because physicians have their patients' current lab values and test results in hand.

Staff members can support physicians by implementing simple process changes, such as setting out the monofilament device before the physician enters the exam room.

Nine out of 10 patients were quite willing to get their lab work done ahead of time.

Patients now arrive at their diabetes visit with the anticipatory question, “What’s my latest A1C?”

device before the physician enters the room, which reminds the physician to conduct a foot exam. Our triage nurses use prescription refill requests to identify those who have not been seen recently, and they notify the case manager to make appointments for these patients and order appropriate lab work. Finally, our records clerks have become adroit at identifying patients with diabetes when scanning new laboratory data or reviewing dictations.

**6. Utilizing nonphysician caregivers.** The literature[4] suggests that nonphysician caregivers outperform physicians at certain elements of chronic care, such as self-management education. Nevertheless, our physicians have been reluctant to utilize our certified diabetes educators (CDEs) at quarterly checkups with patients with diabetes. In September 2005, nearly three years into our chronic care improvement project, our group reluctantly agreed to initiate a series of group sessions with patients who have hypertension and diabetes. Our nurse practitioner CDE and physician champion will lead these groups. If these sessions are successful, they will help legitimize this approach to our physicians.

## Outcomes

We consider our implementation of the chronic care model a success overall, although there is still much room for improvement.

**Clinical outcomes.** The clinical outcomes for all patients, both process measures (e.g., the percentage of patients who received nephropathy and eye screening and the percentage who take aspirin) and clinical outcomes measures (e.g., the percentage of patients with blood pressure, A1C and LDL at targets) are displayed in the graph on page 54. We are not at target with any of the six parameters but have made remarkable improvements in all areas. After three years, the overall improvement slowly continues.

**Physician satisfaction.** In August 2005, the physician champion sent a survey to each of the physicians and nurse practitioners in our group (14 of 16 responded). These caregivers noted that they find the pre-planning letters and individual patient reports of great value. They value less the rank ordering of physicians, financial incentives and quarterly meetings where we review our outcome data. Physicians’ pace of implementation and degree of assimilation of the chronic care model has been unrelated to physician age, gender, number of patients with diabetes cared for or performance rankings. Six physicians said they would invest their own money to keep the project afloat, while five felt it should break even on its own. As a group, they expressed pride in their diabetes care (e.g., “This is working,” “I don’t want to go back to the old way,” “I have more time to educate patients,” “This makes my life easier”). At the same time, they deplored the duplication of efforts to get patient data into both the EHR and the registry. They expressed frustration that hospice and nursing home patients whom they are appropriately treating less aggressively can skew their performance data. Twelve physicians felt that their overall satisfaction with the care of their diabetes patients had greatly increased with the implementation of the chronic care model. Eleven felt that the model had greatly increased the overall quality of care for diabetes patients.

**Patient satisfaction.** Although we have not formally queried patients about their feelings regarding our chronic care model process, the feedback they have given to our staff, physicians and case manager has been favorable. Patients like their individual reports, particularly the historical trends they provide. For a significant subset of patients, these reports appear to engender a sense of personal responsibility. They now arrive at their diabetes visit with the anticipatory question, “What’s my latest A1C?” Our ophthalmology and optometric colleagues comment that our patients frequently show up at their eye appointments

The chronic care model has resulted in steady improvements in all clinical outcomes associated with diabetes.

Physicians report greater satisfaction with the care they are providing under the chronic care model.

Patients seem more interested in their health care and like receiving individual reports of their key measures.

wanting to show off their individual diabetes patient reports. The scanty negative feedback that we have received from patients is often focused on our own misfires: duplication of pre-planning letters and failure to get laboratory orders in place. Some patients have expressed frustration at the frequency of diabetes visits because they feel that their diabetes is in good control.

**Financial outcomes.** As the vast majority of the expenses of our chronic care project are in the salaries of our registered nurse case manager and one data entry clerk and our sources of cash inflow are few, we have a good understanding of the economics of this program. The expenses total about $75,000. During 2004, we received $30 per quarter from RMHP for each of our diabetes patients belonging to the health plan. We also received a $12,500 grant from the Rocky Mountain Health Foundation to help fund the salary of the data entry clerk (see the table below). Even so, in 2004, it cost each of our physicians about $1,800 to keep this program afloat. Our accounting indicates that it costs $114 per diabetes patient per year to administer this program ($74,373 in expenses/650 patients, which is our average daily census for our patients with diabetes). Not quantified in this calculation are the increased number of office visits generated by the chronic care model (from which we realize a profit) and the increased laboratory work generated for our practice (where we are lucky to break even).

> The chronic care model costs $114 per diabetes patient per year, but most health plans will not provide additional reimbursement to cover these costs.

> More limited implementation of the chronic care model could make it economically feasible for practices with fewer resources.

## ACCOUNTING FOR THE CHRONIC CARE MODEL

Chronic disease management results in a financial loss for Family Physicians of Western Colorado because of the additional staffing required. If all insurers whose patients benefit from the program would reimburse the practice for it, as Rocky Mountain Health Plans has done, the program would easily be viable.

| | |
|---|---|
| **Income:** | |
| RMHP payments for diabetes patients (304 patients @ $120/year) | $36,480 |
| RMHP Foundation grant | $12,500 |
| Total income | $48,980 |
| **Expenses:** | |
| Case manager salary and benefits | $59,811 |
| Data entry clerk salary and benefits | $13,437 |
| Physician oversight of the program | $600 |
| Administrative costs | $525 |
| Total expenses | $74,373 |
| **Net loss:** | **$25,393** |
| **Net loss for each of 14 physicians:** | **$1,814** |

### Lessons learned

Family physicians are willing and able to adopt a new system of patient care. After three years, our physicians are on board, all utilizing at least some of the elements of the chronic care model, which has improved our patient outcomes.

The financial insolvency of this program in a private practice where overhead costs have risen well above 50 percent has certainly given us pause, but we have chosen to continue pursuing this endeavor. If other major payers whose patients are benefiting from this process would contribute, our financial concerns would disappear. To date, our attempts to demonstrate the value of this program to other insurers have been unsuccessful. (Read the editorial, "1-800-Chronic Disease Management," on page 17.) Unfortunately, the current medical payment system in the United States remains largely focused on reimbursement for acute care, not chronic care.

Implementation of the chronic care model in smaller practices in our community has been equally successful. Limiting the number of clinical parameters and selecting those that are easily accomplished make the chronic care model more economically feasible for practices with fewer resources.

For now, our physicians remain willing to financially underwrite what they perceive as a clinically useful, efficient process that improves quality of care.

Send comments to **fpmedit@aafp.org.**

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