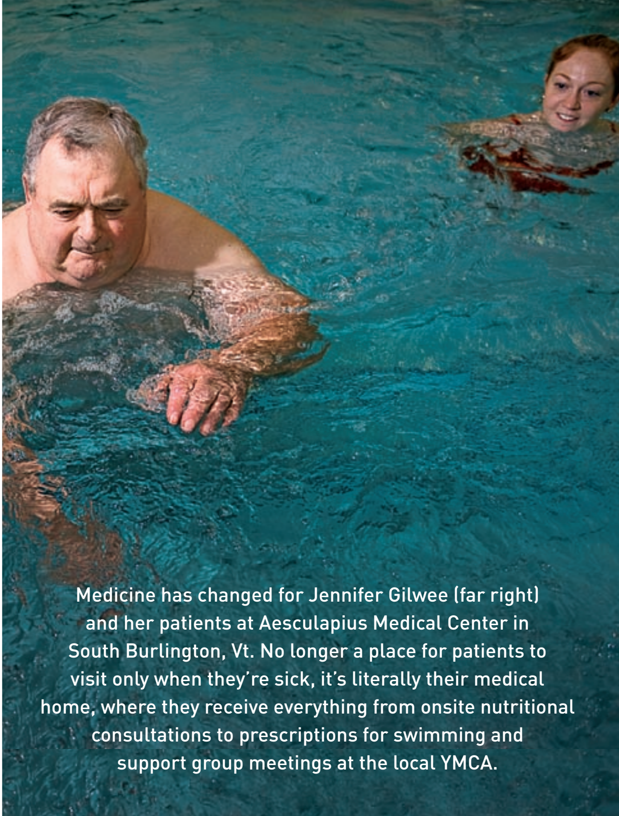

Medicine has changed for Jennifer Gilwee (far right) and her patients at Aesculapius Medical Center in South Burlington, Vt. No longer a place for patients to visit only when they're sick, it's literally their medical home, where they receive everything from onsite nutritional consultations to prescriptions for swimming and support group meetings at the local YMCA.

WHAT IF PRIMARY CARE WEREN'T:
Just seven minutes with your physician // an utter disconnect between your physician and specialists // a place to go only when you need care now // but a system in which you truly are at the center?

Collaborative Care

BY LINDA KESLAR // PHOTOGRAPHS BY JOE FORNABAIO

Primary care physician Jennifer Gilwee is a firm believer that disease prevention is the key to a long, happy life. But during almost a decade in the South Burlington, Vt., practice she shares with eight other physicians and three nurse practitioners, prevention has been tough to implement. In a practice that handles 18,000 people, closely monitoring patients required more staff and expense than the physicians could afford. "I never felt I had a good handle on all aspects of my patients' care," Gilwee says.

During the past year, though, Gilwee's practice, Aesculapius Medical Center, has changed the way it operates. As part of a pilot program the state of Vermont and several private health insurance companies are funding, the practice has become what's known as a patient-centered medical home. Paper patient files are being converted to electronic health records, and the nine physicians can now refer patients to a community health team paid for through the program. The team includes a nurse, a clinical social worker, a nutritionist and an administrator. Physicians, who meet with the community team at least monthly to review cases, are getting to know patients better and are staying in touch after they leave the office.

Although such changes may seem relatively minor, they represent a sharp departure from the way most medicine is practiced, and the impact can be life-changing. Consider a new patient in Gilwee's practice, an obese man in his mid-thirties who was diagnosed with diabetes. Pre–medical home, he might have gotten a session with a nurse educator to talk about monitoring insulin levels and giving himself daily shots, and perhaps to go over recommendations for diet and exercise. But it would have been his job to make follow-up appointments to measure his blood sugar, and no one would have had time to check whether he was going to the gym and losing weight.

With the new system, he gets frequent calls and e-mails from staff members alerted by a computerized patient-tracking system. The team's nutritionist has designed a reduced-carbohydrate diet and an exercise plan for the man, who meets with the team nurse monthly. He has lost 45 pounds and is managing his diabetes without insulin. "If we can work with someone who's early in the process of developing a chronic disease and teach him how to stay healthy, that's going to save money for the patient, the practice and society at large," says Gilwee.

Vermont's pilot is one of more than 90 current or pending medical home demonstrations. Last fall the Obama administration announced plans to involve Medicare, which covers some 45 million people, in several pilots as well, and health reform legislation before Congress would fund expanded testing. Although programs vary, all focus on enabling primary care teams to spend more time with patients and on providing services, such as nutritional and mental health counseling, not normally available in physicians' offices. The goal is to improve the quality of care and achieve better outcomes—and, by fostering patient health and reducing hospitalizations, to save money.

The need to achieve those objectives couldn't be more urgent. The U.S. health system is falling short by many measures—quality of care, patient access and safety, among them—and critics blame that on how care is delivered and financed. After decades of experiments to organize care, most patients are still left largely on their own. They decide when to be seen, and by whom, in a fee-for-service model that rewards volume—more lab tests, more specialist examinations—and undervalues primary care.

Although frontline physicians are likely to be increasingly in demand as aging baby boomers develop chronic illnesses, their numbers are falling. In part, that's because of the explosion of medical knowledge, which naturally leads to increased specialization. But internists and family practitioners are also retiring in record numbers, and fewer students seem willing to sign on as generalists, who may earn half as much as many specialists while working long hours and facing piles of paperwork. There's already a primary care shortage in many parts of the country, and it could worsen if health reform provides coverage to tens of millions of uninsured people. "We're at a tipping point," says Bruce Landon, an associate professor at Harvard Medical School who is studying medical home pilots. "Something has to change."

By paying primary care physicians more for taking charge, medical homes could alter the health care system's priorities and make primary care more appealing. That could have unintended consequences, of course, particularly for the medical specialists, surgeons and hospitals that might be squeezed if resources are shifted to primary care at their expense.

Yet hopes are high that the medical home model could be at least part of the solution to out-of-control health spending, as well as addressing concerns about quality. A 2004 study by the Future of Family Medicine Project, a collaboration among seven national family medicine organizations, estimated that total health care costs would decrease almost 6% if medical homes became the norm, saving some $70 billion annually. And one major proponent of the model—the Patient-Centered Primary Care Collaborative, a coalition formed in 2006 by IBM and other businesses that has grown to include more than 700 members, including large employers, insurers, consumer groups and physicians—suggested in a report that the patient-centered medical home, "if appropriately conceived and properly implemented," could transform the U.S. health care system.

Subtle details mark this practice as a medical home. Erica Hoyt, top, going over results of nutritional tests with patient Michael Dattili, is part of a team focused on preventive health. And the front desk is the hub of efforts to remind patients to schedule tests and appointments.

The notion of a medical home has been around for decades. The American Academy of Pediatrics coined the phrase in 1967, initially referring to a central location for archiving a child's medical record. In 2006 the American College of Physicians expanded the definition to include providing accessible, continuous, comprehensive care—exactly what most physicians found themselves not delivering as they were pushed to see more patients, spending an average of less than 10 minutes on each patient visit.

Other medical associations, such as the American Academy of Family Physicians, have endorsed and developed medical home projects; and along the way, "patient-centered" has been added. Medical home advocates now consider the concept nothing less than a means to reinvent primary care. "There's a whole literature about how more primary care is associated with things we want to see: lower costs and better quality," says Landon. For example, public health researcher Barbara Starfield of Johns Hopkins University has found that an increased supply of physicians in primary care is consistently associated with improved outcomes for cancer, heart disease and stroke, and

with increased life expectancy. Other research has found that U.S. adults who have a regular primary care physician rather than getting care from a specialist cost a third less to treat.

The idea of elevating the importance of primary care isn't new. Most health maintenance organizations require patients to choose a general practitioner and get his or her okay to see a specialist. Yet in those systems, physicians have responsibility but little authority. Their decisions can be second-guessed and overruled by insurance company officials, for whom cost control is the order of the day. Physicians who are insufficiently business-minded could be paid at lower rates, or even excluded from managed care networks.

The medical home model attempts to promote frontline physicians from gatekeepers to patient advocates with clout and resources. And although most pilot programs are relatively new, several have shown promise. The oldest, started in 1998, is Community Care of North Carolina, the state's managed care program for Medicaid. It links independent practices, larger clinics and hospitals to coordinate care for beneficiaries. CCNC began with nine pilots and has expanded to encompass 14 community networks, more than 3,500 physicians and more than 970,000 patients. Each patient is enrolled in a practice that serves as a medical home and provides acute and preventive care, manages chronic illnesses, coordinates specialty care and offers 24/7 on-call access. CCNC facilitates Medicaid's payment of physicians an extra $2.50 per month per Medicaid patient ($5 for those who are aged, blind or disabled) to be a care manager and provide more comprehensive services. (That might seem like a pittance, but it adds up for practices that see large numbers of Medicaid patients.)

Each local community network also receives an additional $3 per patient ($8 for the aged, blind or disabled) per month to pay for outside case managers, including a medical director and even pharmacists, who may help implement disease and care management guidelines for asthma, diabetes and other chronic conditions. This part of the program educates patients, develops treatment plans and monitors outcomes.

Human resources consulting company Mercer, in assessing the CCNC medical home pilot, estimated that CCNC saved North Carolina $60 million in fiscal year 2003, and by 2006 savings had increased to $161 million. CCNC, meanwhile, conducted its own evaluation, finding that quality of care had also improved. Between 2003 and 2006, for example, there was a 40% decrease in hospital admissions for patients with asthma.

"There's a whole literature about how more primary care is associated with things we want to see: lower costs and better quality."

Two other widely cited medical home studies involve Washington's Group Health Cooperative and Pennsylvania's Geisinger Health System. Both are HMOs employing their own physicians and serving as health insurer for at least some patients, and both already had sophisticated electronic health record systems. Those characteristics make the systems inherently collaborative, and hardly typical; only about 5% of care is delivered through such integrated networks. Even so, results of the groups' medical home pilots have been impressive.

In a two-year pilot involving 9,200 patients, Group Health invested an additional $16 per year per patient for primary care by hiring more physicians and other clinical staff. Each physician was assigned fewer patients—1,800 instead of the usual 2,300—and thus was able to extend office appointments from 20 minutes to 30 minutes. There was also time for patient outreach, coordination and daily team meetings to discuss patient needs. Emergency room visits dropped 29%, compared with a control group; there were 11% fewer preventable hospitalizations; and the group saved $54 per patient annually in ER costs, which enabled it to recoup its primary care investment within a year. (But spending on specialty care rose, reducing overall savings; researchers think that higher cost may have resulted from the enhanced primary care's detection of hidden health problems.) Staff burnout rates were also substantially lower than normal in the pilot program, and now Group Health is implementing the medical home model in all of its medical centers.

Geisinger's experiment began in 2006 and involved two primary care practices. It provided an additional $1,500 per month to physicians, who are on salary, and stipends of $5,000 per 1,000 Medicare patients to cover the cost of hiring nurse care coordinators and other staff. Within a year, hospital admissions dropped 14%, and two years into the program, total medical costs were down 9%. Researchers say the pilot has realized about $3.7 million in net savings, for a return on investment of more than two to one. Geisinger too is expanding its pilot.

Because Group Health and Geisinger have unusual advantages over traditional health delivery systems, their successes might not translate directly to the U.S. system at large, says Ann O'Malley, a physician and senior health researcher at the Center for Studying Health System Change in Washington, D.C. Most primary care practices have five or fewer physicians, still use paper records and negotiate payments with a variety of third parties. "That's the challenge of implementing medical homes," says O'Malley. "It's hard to improve care coordination, for example, in a system that doesn't provide financial incentives and infrastructure support."

Moreover, because medical home pilot projects come in so many shapes and sizes, their results can serve only as crude predictors of what would happen in the wider U.S. system. "If you've seen one pilot, you've seen one pilot," says Anshu Choudhri, a manager at Blue Cross Blue Shield Association in Chicago, who has helped shape several dozen medical home pilots in which Blue plans participate. "What we need is data, data and more data," says Allan Goroll, a primary care physician at Massachusetts General Hospital who is leading the development of a nine-practice pilot. "Durable reform will involve fixing the way physicians are paid as well as how they practice."

For now, insurers in most pilots pay physicians their traditional fee for service, then provide an additional per-patient payment to cover uncompensated services. In the 26 demonstration projects Harvard's Landon has looked at, those additional fees range from 50¢ to $9 per patient per month.

Several pilots ratchet up payments as practices achieve program goals. To be recognized as a medical home in a three-year experiment under way in Pennsylvania, for example, practices have to score at least 25 points out of a possible 100 and satisfy at least 5 of 10 requirements to reach the first of three levels of quality and payment based on criteria of the National Committee for Quality Assurance, a standards organization. To earn a Level 3 designation, a practice needs to score at least 75 points and meet all 10 benchmarks. Such practices have typically completed the transition to electronic health records, are able to transmit data between the practice and other providers, and have an interactive Website providing e-mail access for patients. In Pennsylvania, qualifying as a Level 3 practice entitles each full-time physician to an extra $85,000 a year.

Similarly, as a participant in the Vermont Blueprint for Health pilot, Gilwee's practice must meet NCQA standards measuring nine aspects of care, including patient access to appointments, patient tracking, patient self-management support, and performance reporting and improvement. Practices are awarded points for achieving those standards and can earn from $1.20 to $2.39 per patient per month in additional fees. So far Gilwee's practice is earning about $2 extra and expects to add improvements, including electronic prescribing and the ability to e-mail all patients, to move to the top of that range.

That $2 per patient means an additional $36,000 a month for the 18,000-patient practice. But for now the money goes into transforming the practice into a medical home; physicians haven't seen compensation rise. "There's a big administrative burden in setting this up—for inputting data, running lists and tracking patients," says Gilwee. "Changing how we do things can also be stressful, though after a year we're starting to see some results." More than 90% of the practice's diabetic patients, for example, now meet targets for reduced blood sugar and blood pressure. She hopes that will translate into fewer costly complications for those patients in years to come.

Yet she worries whether such early gains can be sustained if outside funding is removed. "If the state and our insurers said they couldn't keep providing the per-member per-month payment, it would all fall apart," says Gilwee, who is also concerned

Primary Numbers //

21.8 Typical length, in minutes, of a patient visit with a general practitioner

18 Estimated number of hours per day that the same physician would need to provide all recommended preventive and high-quality chronic care services to a typical patient roster under the current health care model

133 million Number of Americans, in 2005, with at least one chronic condition, such as heart disease or diabetes, which, according to the Centers for Disease Control and Prevention, are among the top 10 leading causes of death

36.9 Percentage of the primary care workload, such as calling patients, reviewing laboratory results and fielding patient-related questions from staff, not reimbursed by the procedure/examination-oriented fee-for-service model

6 Percentage by which total health care costs might decrease if medical homes were to become the norm, according to one estimate

1.44 Decrease in deaths per 10,000 Americans associated with an increase of one additional primary care physician, according to public health researcher Barbara Starfield of Johns Hopkins University

46 Percentage reduction in the number of U.S. medical school graduates entering family medicine residencies between 1999 and 2009, according to the American Academy of Family Physicians

about the prospect of having to share community team members with other practices as the medical home pilot expands. It was to add two more practices in January, and the five community care team members who work with Gilwee's group could find themselves responsible for additional patients. At the same time, though, the demand for those professionals' services seems to be leveling off as patients "graduate."

The real test of medical homes may come when Medicare gets involved. Last fall U.S. Health and Human Services Secretary Kathleen Sebelius said the giant government program, which insures everyone starting at age 65 and accounts for roughly 30% of the revenue of the average primary care practice, would join several pilots. The average Medicare beneficiary currently sees seven physicians, including four specialists, each year, according to research by the Center for Studying Health System Change. "These are the patients with chronic conditions who should benefit most from better coordination of care," says the center's Ann O'Malley. It's also important to include this population segment, she says, because it has the highest overall health care costs.

Meanwhile, other hurdles could slow widespread adoption. One is the reluctance of most private insurers to pay primary care physicians more without the prospect of quickly earning back their investment. Yet that's really a catch-22—because it's likely that major savings will materialize only after insurance companies embrace the concept. "If you're a purchaser or payer, you've got to say we're going to make this investment with the reasonable hope there will be a financial return, even if it's not immediate," says Don Liss, a physician and medical director at Aetna, which is participating in a medical home pilot in southeast Pennsylvania.

The need for a leap of faith—that outlays of money and staff time now will pay off down the road—may also explain why physicians have been slow to sign up for medical home pilots. Paul Keckley, executive director of the Center for Health Solutions at Deloitte L.L.P. in Washington, D.C., pegs the annual price tag during the start-up phase to be at least $100,000 per practice, regardless of size—a financial commitment many practices are unwilling to make without the backing of government or private insurers, Keckley says.

Finally, there are concerns that shifting resources to medical homes could hurt sectors of the health care system already experiencing serious problems. Emergency physicians, for example, worry that extra money pumped into primary care

Kevin Stoll isn't the only one checking his weight; the Aesculapius staff also monitors his progress and provides diet plans and support.

will take away dollars from financially strapped emergency departments—and that the drop in ER visits reported by some medical home pilots won't make up for chronic underfunding.

Yet such concerns do nothing to undercut the basic logic of medical homes. Giving patients access to providers with the time and tools to take a more active role in their care seems intuitively as if it should improve quality and reduce costs—and in a growing number of experimental programs, it has done just that. Ultimately, says O'Malley, medical homes may be just one part of a complete overhaul of the health care system. But the idea could be a centerpiece of reform, as it has been in Denmark, which organized its entire system around the model and has one of the world's lowest per capita health expenditures and the highest patient satisfaction. If medical homes can make headway on either measure in the United States, they could become a fixture of a new, better way to deliver care. ■

→ DOSSIER

1. **"Proof in Practice" [Patient-Centered Primary Care Collaborative, 2009].** The publication offers the most extensive and up-to-date compilation of medical home pilots and demonstration projects, as well as reports analyzing the model's promise.
2. **"Patient-Centered Medical Home Demonstration: A Prospective, Quasi-Experimental Before and After Evaluation," by Robert J. Reid, Paul A. Fishman, et al., *The American Journal of Managed Care*, September 2009.** This in-depth one-year evaluation of Group Health's medical home pilot provides the first empirical evidence of the benefits of adopting this new type of care.
3. **"A House Is Not a Home: Keeping Patients at the Center of Practice Redesign," by Robert A. Berenson, Terry Hammons, et al., *Health Affairs*, September/October 2008.** The authors, pointing out that the greatest payoff of the medical home will probably involve patients with chronic conditions, stress that practice redesign should apply to all patients, thereby lessening the chances that it actually increases health care spending.

Are medical homes the answer to America's health care crisis? Tell us what you think at protoeditor@mgh.harvard.edu.