

# **Chaos and Organization in Health Care**

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# 1 Chaos

Her friends and doctors still describe her as “formidable,” and at age eighty, SC finds that amusing. When she was younger and still teaching William Shakespeare to college students, she knew she was a force—a passionate, sometimes intimidating teacher who knew how to make her points. She used those same skills after she retired as a community activist—the sort of well-informed, overwhelmingly articulate citizen who just by walking into a public hearing, can cause local politicians’ hearts to sink.

Today, she remains imposing. SC leans toward her listeners as she speaks, and they tend to lean ever so slightly backward. But the word *she* uses to describe herself is “vulnerable.” She has a long list of medical problems, a cane, and many vials filled with pills. In the last few years, she has been diagnosed with three different cancers—chronic lymphocytic lymphoma, then skin cancer, and then lung cancer—and she suffers real aggravation every day from a long list of other conditions, including asthma, arthritis, heartburn, gout, high blood pressure, and hay fever.

As bad as those problems might be, SC is most troubled by the strange and scary spell in 2004 when she lost her memory. For several hours, she could walk, talk, and think—but she could not record new memories. People told her things, and the thought was instantly gone. She asked her partner the same questions over and over. And then, as mysteriously as it began, the spell was over.

At the time she thought she was having a stroke. Instead, after an extensive evaluation, she was told that she had transient global amnesia—more a description than a diagnosis, really, since transient global amnesia thus far has eluded scientific explanation. She has not had any recurrences, but she remains unnerved by the episode.

Over the years, SC has become accustomed to bad news about her lungs, joints, stomach, and blood cells, yet the idea that her *brain* might be vulnerable scares her. She has, after all, always felt that her mind is what defines her. Every day, she reads the *New York Times* and scours legal notices in the local paper for items relevant to her favored causes. But now she also uses the Internet to research her medications and diseases. When she finds something intriguing, she passes the information on to her doctors.

The work of communicating with those doctors—and trying to get them to communicate with each other—sometimes seems a full-time job. SC has a primary care physician and an allergist in the Rhode Island city where she lives. For most of her care, however, she drives fifty miles to Boston, where she sees an internist, an oncologist, a lung specialist, and an orthopedist. In 2006, she was admitted to the hospital for a total knee replacement, and in 2007, she had two procedures to diagnose and remove her lung cancer, and a third for a bladder problem. She had a total of eighteen Boston office visits with twelve different doctors (including one of the authors of this book) in 2007 alone. During that year, she underwent CT scans of her abdomen, chest, and pelvis—twice for each test. She also had her mammogram and a flu shot.

SC takes a *lot* of medications. Her eighteen active prescriptions overflowed her medicine cabinet long ago and now also fill the drawer in the nightstand by her bed. She gets chemotherapy for her lymphoma, and takes six medications for her asthma and an annoying cough. She uses other drugs for her arthritis, heartburn, gout, high blood pressure, and hay fever.

With all these doctors ordering all these drugs and tests, the risk for confusion seems overwhelming. So far, such problems have been relatively rare, in part because she is such an active and intelligent participant in her own care. When a physician's words or prescriptions do not make sense to her, SC does not hesitate to speak up. Inevitably, though, chaos sometimes creeps in.

Her Boston physicians might repeat a test already done in Rhode Island, because it is easier to duplicate the test than track the results down. The findings on a CT scan *done* in Boston by one physician are not communicated to the other doctors in either state. A medication prescribed by one doctor has a potentially dangerous interaction with a drug prescribed by another. A simple question—"Why am I coughing?"—can go unanswered for months. Each specialist tells her that the

ough is not due to a problem in his or her area; no one addresses her issue.

In many ways, her medical story captures what is so right about U.S. medicine today—and what is so wrong. Without all those doctors, tests, and prescriptions, her problems would surely be worse. She would probably not be alive at age eighty, let alone reading the *New York Times* and making local politicians squirm.

SC is benefiting tremendously from modern medicine, but that benefit comes with a struggle that is at times harrowing. She feels like her medical care is a train that could go off the tracks at any time if she relaxes her guard. She knows that her care is less efficient, less reliable, and more hazardous than it should be. But like most patients, SC does not know what she or anyone else can do to assure that nothing slips through the cracks.

### Failing Grades

The chaos that threatens the care of this patient and so many others may not be apparent from the statistics that describe the U.S. health care system. But the cumulative impact of the problems experienced by individuals like her is a health care system that is the most expensive in the world, yet so far from what one would expect in safety and reliability.

Concern that the U.S. health care system has fundamental problems has been building for decades, but the need for fundamental change is a relatively recent insight. The Institute of Medicine sounded the alarm in 2000 with the release of *To Err Is Human* [1]. This first report in a highly influential series focused on problems in patient safety, and described an epidemic of medical errors causing an estimated forty-four thousand to ninety-eight thousand deaths in the United States per year. The enduring image from that report was of a 747 airplane full of patients dying every day because of preventable medical injuries. The second report, released the next year, was titled *Crossing the Quality Chasm* [2]. This report described problems not just in patient safety but also in efficiency, timeliness, and the reliability with which care that is known to be helpful to patients is actually delivered.

In the years since, the gap between the health care we expect and what we actually receive has been characterized in painful detail. The research study that best captured the magnitude of the problem was published in the *New England Journal of Medicine* in 2003 by a research

team led by Elizabeth McGlynn, from the California think tank known as RAND [3]. This study has been so influential that it is routinely quoted by candidates for political office in their critiques of the U.S. health care system.

McGlynn's team interviewed 13,275 randomly selected adults in twelve U.S. metropolitan areas. For about half of these people, the researchers obtained their actual medical records. Using these data, they were able to calculate how often people with thirty different medical conditions received tests and treatments that were likely to be beneficial. The study's "bottom line" became famous: the patients received only 54.9 percent of the interventions recommended for their conditions (e.g., eye exams for patients with diabetes).

Even when "the right thing" *usually* occurred, the gap between 100 percent reliability and the actual rate was surprising. Just 66 percent of recommended immunizations and 69 percent of recommended drugs were given, and patients with breast cancer received only 76 percent of recommended care interventions. For many everyday medical issues, the chances that the right thing happened seemed a coin flip—or worse. The weakest area was counseling or educating patients, which medical records suggested occurred only 18 percent of the times when it would be expected. Only 10.5 percent of the interventions for patients for alcohol dependence were documented as delivered.

One would expect that many medical interventions should be about as routine as airplane pilots putting down landing gear as they approach the ground, but here are the frequencies with which they actually occurred in the McGlynn study:

- Follow-up of the finding of a breast mass with further testing or a doctor visit within three months: 89 percent
- Performance of mammography annually in women with a history of breast cancer: 85 percent
- Use of aspirin within one week for patients with newly diagnosed coronary artery disease: 51 percent
- Use of insulin therapy in diabetic patients who have not achieved good control of their blood sugar levels with oral medications: 39 percent

At first, many people thought that the 55 percent finding had to be wrong, or that it must reflect poor care for socioeconomically disadvantaged Americans. But the results have been meticulously reviewed,

and if anything, they understate the real gaps in quality. The good news—bad news story turns out to be that poor or nonwhite people have not cornered the market on mediocre health care. Whites were actually slightly *less* likely to receive recommended interventions than blacks or Hispanics. People with college or graduate school degrees received 56 percent of the interventions—about the same as the 55 percent rate for those who did not complete high school. Annual income, type of health insurance, age, and gender didn't matter much either.

According to this study, a fifty-year-old white female college graduate with private health insurance and a household income above \$50,000 would receive 57 percent of the recommended care [4]. On the other hand, a fifty-year-old uninsured black man with less than a high school education and an income under \$15,000 would receive 51 percent of the recommended care. The difference in quality experienced by these two types of patients was trivial compared to the gap between ideal care and reality. These two people might never cross paths in U.S. society, but they were likely to receive the same mediocre health care.

A more global look at the “opportunities for improvement” for the U.S. health care system was provided in 2006 by the Commonwealth Fund Commission on a High Performance Health System [5] and updated in 2008 [6]. Instead of comparing U.S. performance for various medical interventions to a theoretical ideal rate of 100 percent, this commission used real-world benchmarks—the rates achieved by other countries, or the top 10 percent of U.S. states, hospitals, health plans, or other groups of health care providers. Thus, the U.S. health care system was evaluated using real-world goals that fell well short of perfection. Think of this approach as grading the U.S. health care system on a curve.

Using this approach, the performance of the U.S. health care system averaged only 66 percent of the benchmark rates in 2006, and it had not improved at all in the 2008 update. The United States in fact fell from fifteenth to last place out of nineteen countries on a measure of mortality amenable to medical care, because other countries had improved while the U.S. performance stayed about the same. Compared with other countries, U.S. patients were less likely to have their medications reviewed at discharge or to report good access to care when they needed it. U.S. patients were also more likely to report medical, medication, or lab test errors.

The “underuse” of beneficial care may be particularly galling to physicians, because it reveals a lack of reliability that belies their public image. But there are two other major types of errors that are of comparable social concern. “Overuse” occurs when an intervention’s benefits do not justify its potential harm or costs—for example, the performance of a high-cost radiology test that is unlikely to change a patient’s treatment, or a prescription of antibiotics for a patient who probably has a viral respiratory infection. Although physicians may not set out to give treatments of little value to their patients, after-the-fact reviews of cases suggest that as many as one-third of some medical interventions may be clinically inappropriate [7]. The third type of error is “misuse,” which occurs when a preventable complication eliminates the benefit of an intervention. An example is an allergic reaction to penicillin in a patient with a known allergy to this class of antibiotic.

Concern about overuse is driven by rising health care costs, while worries about misuse rise with each press report of patients who receive the wrong drug, have surgery on the wrong site, or have treatment complications that might have been foreseen and prevented. For patients, the impression that U.S. health care is dangerous is reinforced by their actual experiences. In one survey, more than a third of physicians and laypersons reported that there had been errors in their own care or a family member’s care [8].

Critics of U.S. health care tend to focus on one issue at a time—for instance, our high costs, lack of safety, or lack of reliability. Perhaps because these challenges seem so formidable, health care leaders tend to specialize in one or at most two of these areas, as if they were separate battles to be fought. Responsibility for patient safety, cost reduction, and clinical quality improvement in hospitals may be assigned to three different people.

The wisdom and effectiveness of this division of labor are uncertain. A credible case can be made that these problems share the same root problem: medicine has become too complex for the way we deliver health care.

### **The Overwhelmed Physician**

Although medicine has advanced rapidly in recent decades, the daily lives of many physicians have changed surprisingly little. They rise early, often before the sun is up, and go first to the hospital, where they see their patients who are hospitalized. They write (by hand

usually) orders for the tests to be performed and treatments to be delivered that day. By 8:00 or 9:00 a.m. they are at their offices, where they are the only physician or perhaps one of two to three doctors. They work hard throughout the day, seeing patients every fifteen minutes or so. They write prescriptions for medications on paper prescription pads. In between patients, they make or take calls from patients, pharmacies, and colleagues. Then at night they carry home a stack of paperwork to be completed by the next day, when the cycle begins anew.

The pace of the physician's day has always been relentless, frequently hectic, but doctors have been sustained through the ages by something beyond monetary reward. They are respected throughout their communities—even romanticized for their selfless dedication to their patients. The cultural role of physicians is that of the heroic healer, sacrificing their own lives after a fashion to help patients extend theirs. Rising from bed in the middle of the night is just one more way in which physicians convey their commitment to patients. Indeed, appearing gaunt and exhausted has never been a professional liability for physicians.

Dedication is an expectation with which most physicians remain comfortable; more problematic is the related assumption that they are also all knowing. The rigors of medical training are hardly exaggerated in films and books. Of the 148 hours in a week, medical students and young physician trainees might spend 40 of them asleep, and devote virtually all the rest of those hours to learning their craft. At the end of their training, they assume a status in which their orders and advice are rarely questioned.

The special role of physicians as all-knowing healers is sustained partly because many patients harbor hopes that their doctors have near-magical powers. For example, one study found that about one-third of patients want to be on an equal footing with their physicians—such as calling each other by their first names. But a comparable percentage *want* to call their physicians by their title and last name (e.g., Dr. Smith), just as they also want their physicians to wear white coats [9]. As one psychiatrist-colleague puts it, “When people are sick, they don’t want to put their fate in the hands of someone who could be sitting on the bar stool next to them later that evening. They don’t want a friend—they want a healer who will cure them. They want someone with superhuman powers, so they don’t really want to relate to physicians as equals.”

This special status for physicians is established in subtle ways. Office staffs in many physician practices do not address physicians by their first names in front of patients. First-year medical students at over a hundred U.S. medical schools have “White Coat Ceremonies,” in which they don the traditional physician garb with the solemnity of judges putting on robes. Some physicians (including one of the authors) were trained never to open a book to look up information in front of a patient, but to instead leave the room to find the needed facts. The unspoken message to patients is, “I have everything up here in my head.”

This myth has proven unsustainable, however, and if there ever was a time when physicians really could keep everything they needed to know inside their heads, that era ended long ago. Since World War II, U.S. federal and corporate funding for research has grown rapidly, leading to not just new drugs and technologies but also an explosion in medical knowledge. According to the U.S. National Library of Medicine, there were 670,943 new articles that were indexed in 2007 in its database called MEDLINE—about twice as many as the 336,000 new articles published back in the Dark Ages of 1996 [10]. (The number of articles *retracted* because of errors or scientific fraud increased from 16 to 124 over that same period.)

A generation ago, physicians mastered their fields by reading textbooks like *Harrison’s Principles of Internal Medicine* cover to cover. As the expansion of scientific knowledge accelerated, physicians came to rely on weekly periodicals such as the *New England Journal of Medicine* and regular hospital teaching conferences called Grand Rounds. Today’s physicians feel so hopeless about their ability to keep up with the progress of medicine that many have given up on lifelong learning activities. Around the country, attendance at hospital teaching conferences is in decline, and subscriptions to medical journals have fallen off.

Many older physicians still struggle to stay current with medical science by continuing these time-honored educational activities, but younger physicians know that the game has changed. Instead, they seek to master tools that enable them to acquire knowledge “just-in-time” via the Internet. Many physicians use Google and Wikipedia to help them find the most current information, often right in front of their patients.

Even with all these resources, physicians are increasingly aware that as individuals, they cannot know everything they need to deliver state-

of-the-science care, particularly for more complex patients with diseases of multiple systems. One direct result of the growth of medical knowledge is thus the emerging importance of specialty care (e.g., cardiology and oncology), and the division of specialists into finer and finer subcategories. At many academic medical centers, specialists focus on one problem and one problem only. For example, cardiologists are divided into experts on arrhythmia, heart failure, coronary disease, or prevention. Oncologists at major medical centers concentrate on just one disease—lymphoma experts do not see myeloma patients, and myeloma experts do not see Hodgkin's disease patients, and so on.

All this superspecialization is wonderful when the right patient gets to the right doctor. If you have multiple myeloma, you probably *do* want to have a doctor whose professional life is completely focused on that disease. Having such a physician will increase the chances that you get the most current therapy, and that he or she will recognize unusual complications or developments right away. For occasional patients, having that superspecialist might be the difference between survival and premature death.

On the other hand, the superspecialization of medicine can cause new challenges for patients and clinicians. One is that sick patients often have to see multiple physicians, particularly if they have multiple diseases. Consider the twelve physicians seen by SC in 2007 alone at a Boston teaching hospital fifty miles away from her home. In her case, the physicians all used the same electronic medical record (EMR), but 20 percent of U.S. physicians were using electronic records at that time [11], and few of these electronic records are able to communicate with each other. If her physicians had not all been at one institution, what are the chances that each of them would have known what the others were doing and thinking?

Another type of problem that is especially frustrating to patients arises when they have diseases or symptoms that do not fit cleanly into the domains of superspecialized physicians. These specialists may be extremely competent in their narrow area, but extremely uncomfortable outside of it. As a result, they approach patients considering the well-contained issue of "Is this what I do?" rather than the more ambitious question of "What is wrong?"

A joke in medicine is that young physicians who want to be on the cutting edge of medicine today should try to learn more and more

about less and less, until they know everything about nothing. Conversely, doctors who want to be generalists, such as internists and other primary care physicians, are doomed to knowing less and less about more and more, until they know nothing about everything.

This joke reflects a major worrisome trend in modern medicine: primary care is losing its appeal to physicians, even as the subspecialization of medicine makes the coordinating role of a primary care doctor all the more essential. Complicated patients need *someone* who is focused on them as people as opposed to the diseases that they have. Nevertheless, among third-year internal medicine residents in 2003, only 27 percent planned to practice general medicine—a rate just half that of 1998 [12]. Young physicians are instead choosing careers with narrower scopes of knowledge and higher compensation.

The gap in pay between primary care physicians and specialists might matter more to young physicians in the United States than in other countries because U.S. doctors tend to graduate from medical school with so much debt. In many other countries, physicians have lower incomes, but medical school is completely or heavily subsidized by the government. In the United States, the median debt for physicians on graduation from medical school ranges from \$115,000 at public institutions to \$150,000 at private institutions [13]. Typical loan repayment rates are about \$1,500 per month—an obligation that encourages young physicians to think long and hard about specialties that might pay two- to threefold more, even if they are attracted to primary care.

But money is not the only reason that primary care is losing its attraction. Data on the career choices of medical students who graduated from 1996 to 2002 suggest that a “controllable” lifestyle is more important than income or any other factor [14]. Table 1.1 shows how the researchers categorized each of sixteen specialty options on how controllable or “uncontrollable” a lifestyle they permitted, along with the average income, hours of work per week, and years of graduate medical education required. Primary care specialties, such as family practice, internal medicine, and pediatrics, were considered to have uncontrollable lifestyles. So were surgical specialties, but note that the average income of the uncontrollable surgical specialties was considerably higher than the primary care options. The detailed statistical analyses indicated that several factors influenced medical student career choices, including income, work hours, and years of training. None of these factors, however, were as critical as the appeal of a controllable lifestyle.

**Table 1.1**  
 Characteristics of the selected specialties

Specialty	Lifestyle	Average income, \$ in thousands	Average work hours per week	Years of graduate medical education required
Anesthesiology	Controllable	225	61.0	
Dermatology	Controllable	221	45.5	4
Emergency medicine	Controllable	183	46.0	4
Family practice	Uncontrollable	132	52.5	3
Internal medicine	Uncontrollable	158	57.0	3
Neurology	Controllable	172	55.5	4
Obstetrics and gynecology	Uncontrollable	224	61.0	4
Ophthalmology	Controllable	225	47.0	4
Orthopedic surgery	Uncontrollable	323	58.0	5
Otolaryngology	Controllable	242	53.5	5
Pathology	Controllable	202	45.5	4
Pediatrics	Uncontrollable	138	54.0	3
Psychiatry	Controllable	134	48.0	4
Radiology (diagnostic)	Controllable	263	58.0	4
Surgery (general)	Uncontrollable	238	60.0	5
Urology	Uncontrollable	245	60.5	5
Average for the above specialties	Not applicable	208	53.9	4

What does a controllable lifestyle mean? In this study, having control over one's work hours was critical to the definition, and other data confirm that younger physicians place a high priority on time for life outside work. These priorities are somewhat in conflict with the concept of the selfless physician willing to be there for his or her patient at any time or place. Still, these priorities are consistent with a modern society in which many physicians' households have two working adults, and about half of graduating physicians are women, many of whom expect to start families. The incomes in these households are substantial—but life itself does not feel, well, controllable.

Of course, these issues are not restricted to medicine. Families with two highly educated spouses with demanding careers are part of a national trend that has seen the proportion of married employees in

dual-earner couples rise from 66 percent in 1977 to 78 percent in 2002 [15]. Noting an increasing tendency toward educational parity between spouses, one report on these workforce trends concluded that “families have now reached their limits. They have no more hours available to add to the labor force or to improve family income. . . . Higher educated employees under onerous time demands face the need to gain greater flexibility and control over how, when, and how long they work. Young professionals, particularly women, need to be able to reduce their working hours, to allow them to remain in the careers their education has prepared them to pursue” [16].

Now here is the truly troubling news. If the problems with primary care were just the pay and the demanding hours, they might be addressed by expensive yet simple measures like paying primary care doctors more and reducing the number of patients that they see. The conviction is growing, though, that the problem with primary care may be the job itself.

Primary care physicians are no longer the all-knowing healers of a generation ago. Instead, they spend much of their day managing an overwhelming flow of information—lab tests; requests for referrals, prescriptions, and the completion of forms; calls from patients and family members. Various studies have found that a typical primary care physician spends an average of seventy-four minutes per day reviewing test results [17], and has to review an estimated eight hundred chemistry and hematology reports, forty radiology reports, and twelve pathology reports per week [18]. The risk of an error is ever present; in one study, 83 percent of physicians reported that there had been at least one test result they wish they had known about sooner during the previous two months [17].

Besides having too much patient data to track, there is, quite simply, too much to know—even for the bread-and-butter issues that dominate the life of primary care doctors. Take one of the most mundane problems in medicine: the simple urinary tract infection. A generation ago, there were perhaps two to three options for treating these infections; today there are dozens. Physicians hesitate when prescribing drugs they have been using for years, wondering if they are giving their patient the best treatment possible, in the right dose, for the right number of days.

Similarly, when physicians in their fifties and sixties went to medical school, there was one test for diagnosing pulmonary embolism; there are now at least five tests that are commonly used, in a wide array of

combinations. Hepatitis B was an easy problem for the physician in those days—there was no treatment. But at present about seven different drugs are effective, and only specialists in this condition are comfortable prescribing them. For any given issue or any given drug, physicians have the ability to learn the state of the art—in theory. In reality, there are too many issues and too many drugs, and not enough time to learn about them. Being human, many physicians do not know where to begin.

A painful irony, therefore, is that the increase in our collective knowledge causes individual physicians to feel less knowledgeable. Medicine's ability to help patients is expanding, but physicians' comfort zones are shrinking—especially in primary care. In a large survey in the 1990s, 24 percent of primary care physicians reported that the "scope of care" they were expected to provide was greater than it should be [19]. There is no particular reason to suspect that this percentage has decreased.

Meanwhile, the number of tests performed, drugs being used, and specialists being consulted all continue to rise, and the primary care physician is expected to know and coordinate everything. In the paper-based world of most physician offices, this effort is not going well. In a 2003 study of thirty-two primary care clinics in Colorado, primary care physicians reported that they were missing important clinical information in 14 percent of the visits [20]. The missing data included laboratory results (6 percent of all visits); letters or dictations (5 percent), radiology results (4 percent), history and physical examinations (4 percent), and medication information (3 percent). The physicians believed the missing data were at least somewhat likely to adversely affect their patients in about 44 percent of the cases, and reported spending significant time unsuccessfully trying to track down the data (five to ten minutes, 26 percent; more than ten minutes, 10 percent).

Physicians hate to make mistakes, but even with superhuman efforts, they cannot always avoid them. A typical primary care doctor follows a panel of twenty-five hundred patients. Some experts calculate that a typical group of patients of that size requires 7.4 hours of physician time per day for basic preventive services, and another 10.6 hours per day for the care of common chronic disease [21, 22]. If these estimates are correct, physicians are either not getting enough sleep or not doing everything that their own guidelines suggest they should do. Both are probably true.

The missed opportunities to give patients care that would be beneficial to them (the 55 percent phenomenon) may be a relatively benign form of failure. More horrifying are the times when doctors prescribe drugs that potentially endanger patients because patients are allergic to the medications or because the drugs may interact with other medications being used by the patient. How often does this occur? One study found that for every one hundred Medicare enrollees per year, there is a rate of five “adverse events” from medications, of which more than one-fourth were preventable [23].

Doctors still work long days, but primary care physicians in particular say that they leave work at the end of those days feeling that their work is not complete. They worry that they have made mistakes because there were things they should have known yet did not, or things that they just did not get to.

### **A Loss of Trust**

Doctors are not the only people who are worried. The general public is bombarded by information about hazards to health from every angle, including the news media, direct-to-consumer advertising, and medical dramas on television. This information is irresistibly interesting, almost hypnotic. For example, CNN has actively solicited cancer survivor stories to share with others in a feature called *Saving Your Life* [24].

Even when the information in the media is accurate, it is often difficult for consumers to place in perspective. The fact is that the organizations (including health care providers) that offer this information have business interests that are served by arousing a certain amount of alarm. For better *and* worse, U.S. consumers are being turned into patients. They are forced into awareness of the diseases and aging processes that might compromise their health, and wonder if they are getting everything they could and should.

One thing is clear: Americans *are* getting a lot of health care, and the amount is increasing. Prescription drug use rose from about 4 drugs per person in 1994 to 5.2 drugs in 2001–2002 [25], and the number of X-rays and other tests performed continues to rise at a similar pace. Some of these increases represent real progress that helps people live longer and better lives, but many prescriptions are written and tests ordered to provide peace of mind to patients who are worried.

When people worry, they question relationships that were trusting in the past, and the doctor-patient relationship is no exception. An

analysis of survey data collected from 1976 to 1998 showed that physicians are still held in relatively high regard by the general public, but there was an erosion of trust and respect for doctors during this period [26]. Since a major component of career satisfaction for physicians is their stature in the community, the importance of this erosion is clear. Physicians mourn the loss of trust, and a vicious cycle is set in motion, since physicians who are walking (or running) around in a foul mood do not inspire confidence in patients that the health care system is going to meet their needs.

The facts sometimes tell a story quite different from general impressions. For example, physicians *and* patients believe that visits with doctors have gotten shorter and shorter. And it would make sense if this were actually true. The number of patient visits to physicians' offices has been steadily rising [27], and physicians have squeezed more and more visits in per day because of rising demand from patients and financial pressures. Paperwork and other tasks that must occur outside the visit (e.g., communicating with the many other doctors participating in a complex patient's care or entering data in computerized medical records) have only increased. So face-to-face time with patients must be decreasing, right?

Not so, at least according to data from two large surveys that studied office visits in large samples of U.S. physician practices. One survey found that the average duration of the visit increased by 1.1 minutes from 1989 to 1998, while the other reported a 2.0-minute increase. The increases in visit duration were found for primary care and specialist physicians, managed care and non-managed care patients, and new patients and return visits [27].

If doctors are spending more time with patients, why does it seem like less? There is just so much more to do than a generation ago. To take good care of patients today, physicians need to keep track of vaccinations to reduce their patients' risks of influenza and pneumonia, and tests to screen them for cancer and risk factors for cardiovascular disease. Conversations that often last several minutes are needed to explain options for screening patients for prostate cancer ("Is a prostate-specific antigen test really a good idea?"), colon cancer (colonoscopy versus home testing kits, versus other options), and atherosclerosis ("Should I have an exercise test, a CT scan, or a new special blood test?") Physicians are urged to screen patients for depression, alcohol abuse, and domestic violence. A good breast examination takes several minutes. Patients' expectations that their physicians will do all these

things are high; after all, those patients have been learning what to expect from the media.

All available data indicate that despite the slightly longer visits, patients' expectations are often not met, and that the care they receive seems inefficient, poorly coordinated, and unsafe. The 2008 Commonwealth Fund Survey of Public Views of the U.S. Health Care System [28] found the following when it asked adults to describe their health care experiences during the previous two years:

- Physicians ordered a test that had already been done: 17 percent
- Patients had difficulty getting advice from physicians during regular office hours: 41 percent
- Physicians failed to provide important medical history or test results to other doctors or nurses: 21 percent

Other data show that 31 percent of sicker adults report that during the past two years, they had left a doctor's office without getting crucial questions answered, and 39 percent reported that they did not follow a doctor's advice [29]. In another study, just 51 percent of the people surveyed felt that their primary care physicians' knowledge of their entire medical history was excellent or very good, and just 36 percent thought their doctors had excellent or very good knowledge of what worried them most about their health [30]. Of senior citizens who reported in a national survey that they had skipped doses or stopped medications because of side effects or their belief that the medication was not working, 39 percent had not talked with a physician about it [31].

Like so many other components of modern medicine, the doctor-patient relationship is under duress.

The picture we have painted is one of a health care system that feels out of control to patients and the physicians caring for them. It is a system that is failing to meet the needs of patients with reliability, where no one—the doctors, the patients, and the parties paying for health care—is happy or believes the status quo is sustainable. Before contemplating solutions, we will next examine the forces that created the chaos that threatens health care.