Introduction

In the early years of the 21st century, the US health care system is in a state of both feast and famine. New scientific breakthroughs and advances in technology have cured diseases and extended lives beyond what was imaginable even a decade ago. Yet despite these riches, the health care system is fundamentally broken. It fails on three measures of care, especially in the treatment of older persons.

The first measure is cost. In 2004, the cost of health care in the United States grew at a rate of 7.7%, compared to the overall consumer price index of 4.4%.1 In fact, many US economists have accepted—but do not like—that health care spending will rise at a rate of 2% to 3% higher than the general economy.

The second measure indicating failure is patient satisfaction. When elderly patients were asked in a recent survey about their physicians, they reported that physicians listen carefully 65% of the time, explain things clearly 59% of the time, and spend enough time with them only 54% of the time.2 Of course, patient satisfaction will never be 100%, but it should be 80% to 90%.

The third measure on which health care fails is quality. In a study published in 2003, performance on quality indicators for 30 conditions and preventive care was measured. Only 55% of recommended care was provided—and there was tremendous variation in the quality of care provided. For cataracts, 80% of recommended care was provided, whereas for hip fractures, it was only 23%.3 The Assessing Care of the Vulnerable Elderly (ACOVE) study began by developing an instrument to identify vulnerable elders—older people at higher risk of dying or having functional decline within two years.4 The ACOVE team then created quality indicators, on the basis of literature review and evaluation by an expert panel, for 22 conditions (eg, coronary artery disease, dementia, falls, urinary incontinence). Finally, they performed a medical records review and structured interviews for each condition for patients enrolled in two health plans—on the East and West Coasts. The overall results were virtually identical to those of the first study. Only 55% of quality indicators were met.5 However, they also found that the care for geriatric conditions such as falls, urinary incontinence, and dementia was much worse than for general conditions such as atrial fibrillation and stroke. For geriatric conditions, only 31% of recommended care was provided, again with high variability in quality of care; for example, 82% of recommended stroke care was delivered, but only 9% of end-of-life quality indicators were met.

Physicians say they could provide better care if there was more money and more time. However, data from the Centers for Medicare and Medicaid Services demonstrate that across the states, as more money is spent, the quality of care is worse.6

To address these failings, it is important to review the current state of health care to identify barriers to good health care and to review individual and systems efforts to improve health care.

Barriers to Good Care

Insufficient Cognitive Capacity

Despite extensive training and the availability of continuing education for physicians, it is almost impossible for physicians to keep current. There is simply too much to know. During 2001, the US National Library of Medicine added more than 12,000 articles to its collections per week. To maintain current knowledge, a general internist would have to read 20 articles per day, 365 days a year.7 However, they also found that the care for geriatric conditions such as falls, urinary incontinence, and dementia was much worse than for general conditions such as atrial fibrillation and stroke. For geriatric conditions, only 31% of recommended care was provided, again with high variability in quality of care; for example, 82% of recommended stroke care was delivered, but only 9% of end-of-life quality indicators were met.

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care for a patient with heart failure, there are ten angiotensin-converting enzyme inhibitor options, seven angiotensin-receptor blockers, three beta-blockers, and two aldosterone antagonists. Each medication has a different starting dose, target dose, and dose titration schedule. It is unreasonable to expect a physician to remember all of this information.

The Health Care System Is Not a System
The first principle of health care delivery is that the American health care system is not a system. Rather, it is a collection of providers and vendors that is fraught with inefficiency and waste. By some estimates, one-third of all health care spending is waste.

- The first waste is duplication. How many medical histories and physical examinations does a patient really need? For example, at many teaching hospitals, there are four different sets of medical histories and physical examinations for each patient—one from a medical student, one from an intern, one from a senior resident, and one from an attending physician.

- A second area of waste is reordering tests rather than looking for results. This is frequently caused by the unavailability of clinical information at the time it is needed. For example, consultation notes are not on the chart, and neither are procedure reports, inpatient records, discharge summaries, or emergency department records. This problem may occur less often in a group or staff-model managed-care system, but medical records are very fragmented in most clinical settings.

- A third waste issue is the wrong person doing the job. The most expensive employees are physicians, much more costly than office staff. The time that physician and patient are in a room together is the most expensive time. The second most expensive time is during the office visit—before and after the patient sees the physician. The least expensive time is the time that patients spend at home preparing for the visit, such as completing a previsit questionnaire. This is an excellent way to collect needed information at minimal cost. To run an efficient practice, physicians must delegate tasks whenever they can and reserve the physician–patient visit time for the elements of care that require a physician.

The first sign that health care is not a system is the work-around—fixing the situation but not fixing the problem. For example, a patient does not receive a test in a timely manner. The physician makes a phone call, insists that the test is done promptly, and it is performed the next day. The same problem occurs the next week. The physician has not fixed the basic underlying problem. Telltale signs of a systems problem include clinicians, schedulers, and technicians making frequent exceptions; physicians pulling rank to get tests or consultations performed; and covering physicians deferring treatment decisions until the primary team returns.

Finally, the health care system is far behind the times. As noted by the American Geriatrics Society, “information technology and the electronic health record hold great promise for improving patient care. Yet, this promise largely remains unfulfilled. Only a minority of health care providers currently has access to systems that truly facilitate care . . . . Electronic documentation of the content of patient visits remains behind that of most American commerce.” In fact, the most common use of the electronic health system is for billing, not to improve care.

The Rewards Are Wrong
In a 2003 survey of physicians by the Commonwealth Fund, physicians reported that productivity and billing was the most commonly reported (by 72%) factor affecting their compensation. Physicians are paid for the number of visits they complete and the complexity level of those visits. The least commonly cited (by 19%) factor affecting compensation is a quality bonus. Few reported being paid for doing the right thing—improving quality.

Improving Health Care
Given the current situation and barriers to change, what can be done to improve health care? There are two broad categories: individual changes, which a physician can initiate, and systems changes, which require an organized delivery system.

Individual Practitioner Approaches
At the individual practitioner level, several small steps can yield big dividends. First, delegate data collection; second, run a more efficient office; and third, delegate plan implementation.

Delegate to Office Staff
For some reason, many physicians have difficulty delegating clinical care tasks to office staff. Perhaps they fear that the staff are not conscientious enough, have too much to do, or do not want to perform functions outside their usual roles. In fact, many staff welcome the notion of being more instrumental in facilitating office visits. Physicians can
delegate tasks such as screening and case identification, history gathering, recording current medications and allergies, taking orthostatic blood pressure readings, testing visual acuity, and providing patient education.

**Delegate to Patients**
In addition to delegating tasks to staff, physicians can delegate activities to patients. For example, the University of California, Los Angeles (UCLA) Geriatrics Practice uses a 15-page, previsit questionnaire for elderly patients. This reduces the physician’s history-gathering time from 30 to 40 minutes to 8 to 10 minutes. Also, patients can prepare a list of what they want to discuss (if it is not on the list, it is probably not important) and a patient diary—a calendar on which the physician writes the symptom to monitor and the patient returns it, completed, at the next visit. Frequently when patients keep symptom diaries, the symptoms go away. If the symptoms persist, these diaries can illustrate a pattern, and sometimes this helps clinicians discover the reason.

**Minimize Data Recording Time**
Dictation is the most efficient means of recording information but has the drawbacks of transcription expenses and the inability to easily link the content of the dictation to monitoring the process of care rendered and to quality-improvement efforts. Many offices use paper-and-pencil templates that allow the physician to document care quickly, often using check boxes. Contrary to popular belief, electronic health records do not save physicians time in recording clinical information. However, such records do help physicians find information needed for clinical care and prescribe more easily, and the records can be valuable in monitoring and improving quality. Nevertheless, electronic health records are an essential part of the future of health care, so we need to construct them so that they facilitate quality rather than simply document care.

**Keep Readily Available Information Needed for Decision Making**
Every time a physician leaves the examining room, the flow of patient care is interrupted. Once outside the room, the physician may be further distracted by staff or colleagues and may be delayed in returning to caring for that patient. Physicians can be more efficient by staying in the examining room until the patient leaves. Thus, information needed for clinical decision making needs to be available in the examining room, including pocket guides, such as *Geriatrics at Your Fingertips* (The American Geriatrics Study, published annually); personal digital assistant programs that provide drug doses, interactions, and side effects; and computerized reference systems. However, the latter tend to be too slow for use in the context of an office visit and may be more useful as homework for the physician to seek information during unscheduled time.

**Delegate Plan Execution**
Efficient physicians establish a network of allied health professionals such as social workers, dietitians, physical and occupational therapists, and health educators. They use the same people over and over again, people they can trust. They build a team.

**Systems Approaches**
Systems approaches are more comprehensive methods overcoming problems in providing health care. They often require multiple levels of change, such as recrafting job descriptions, making changes in work flow, and integrating a variety of information sources into clinical care. For example, a systems approach may begin with identifying frequent users of health care through any of several paper-and-pencil scoring systems or administratively calculated hierarchical classification systems. Systems approaches may employ alternative methods of delivering health care such as group visits, an innovation that was pioneered in Kaiser Permanente (KP) and that has had rapid diffusion;10 in-home assessments by nurses, including preventive and posthospital discharge visits; disease management programs; and health care self-management classes.

**Quality Improvement**
Quality improvement focuses on the process of care and emphasizes standardization. If health care providers are delivering care the same way every time, even if it is not perfect, care processes can be systematically addressed and error rates and costs will decrease. When everybody is doing something different, it is very difficult to improve health care. Quality improvement requires measurement—the physician needs to know how s/he is doing—and frequently use protocols. To get started with quality improvement, physicians should select a care process problem that will be useful to improve and simple, work with small representative samples, and then build measurement into the physician’s daily work.11 Physicians must ask themselves, “What do we want to improve? Which care processes do we want to ensure that all persons with specific diseases receive? What is the care product we—the organization—want to deliver?” For example, to create the KP formulary, physicians agreed on
the drugs that are the first line of treatment for each condition. But when treating individual patients, if a physician wants to depart from the list, s/he can order different medications. The guiding principle is to eliminate variation among clinicians but allow variation, when indicated, among patients.

There are limitations to quality improvement. The targets are typically easy-to-change, low-lying fruit. Quality improvement focusing on frail, elderly patients is particularly difficult because their conditions, often multiple, and the systems to support their care are so complicated. Quality improvement also takes a considerable amount of effort, and some of the results have been less impressive than hoped for.

Redesign of Care

The second phase of the ACOVE project (ACOVE-2)12 created an intervention that fundamentally changes the office visit for geriatric conditions. In addition to changing what happens in the physician’s office, the intervention is characterized by different roles for patients and their families, and partnership with community-based organizations. The ACOVE-2 project identified a target population of outpatients aged 75 years with untreated conditions—urinary incontinence, falls, and cognitive impairment. If a condition was detected, a standard multicomponent intervention was triggered, including medical record prompts that encouraged performance of essential care processes and collection of condition-specific clinical data by office staff. Some practices also allowed office staff to perform simple procedures, such as urinalysis for urinary incontinence, before the physician saw the patient.

Medical History and Physical Examination

For each condition, a structured visit note led the physician through the appropriate data-collection and care processes. The structured visit note (Figure 1) was one page with check boxes, so the physician could quickly and legibly document the care provided. On the same note, office staff completed some medical history items and simple procedures (eg, obtaining orthostatic blood pressures, conducting visual acuity testing). For example, the history of present illness for a patient who has fallen requires asking a series of questions to obtain important clinical information and satisfy quality indicators for falls. All of these questions can be, and have been, delegated to office staff so that the physician sees the structured visit note with the appropriate boxes already checked. Physicians then collect more detailed clinical data (eg, a gait and balance examination and a brief neuromuscular examination).

![Figure 1. The structured visit note.](image-url)
In 2011, the first baby boomers will be 65 years old; 75 million will follow. The per-manent physician evaluation and plan formulation can be reduced to a few minutes.

Patient Education and Involvement

The next component of the multicomponent intervention was getting the patient more involved through patient-education materials and in an active role in follow-up care. These materials, assembled for each condition, were available for the physician in the examining room.

Patient-education materials included general lay-language summaries and other resources from organizations such as the National Institute on Aging and the Alzheimer’s Association. The materials also included names and addresses of local community resources, such as tai chi programs to help prevent falls. These summaries were particularly useful because the specific referral information was at hand when the physicians needed them.

In addition, patients were given follow-up questionnaires developed for each condition that were to be completed before the next visit to indicate whether the treatment was working and prompt the physician to take the next steps if it was not. The top part included instructions for the patient, and the bottom part included questions such as “Did you have any problems with the treatment that your doctor prescribed? Have you fallen since that last visit? Is this treatment working?” These forms keep the patient involved and active.

Decision Support

Finally, the intervention included decision support for the physicians, small-group working sessions that were not traditional lectures. Rather, they focused on how to use the structured visit notes and supporting documents and how to get these care processes incorporated into their visit in two minutes or less.

Effectiveness of the ACOVE-2 Intervention

The ACOVE-2 practice redesign intervention was implemented and evaluated at two sites in California: a desert and a coastal community. As a result of the intervention, the care provided for falls and incontinence was much better compared to that provided by other physicians within the same groups. However, the quality provided was still less than optimal. Why? First, the physicians did not want to delegate data collection, as for orthostatic blood pressure. Some believed they needed to do everything themselves. Second, the intervention did not provide enough early feedback on changes that were not effective at improving care. The physicians did not know that the care was suboptimal and did not take steps to modify it. Third, there was not enough patient empowerment. Many physicians did not like patient follow-up sheets. They were afraid of patients asking questions about these conditions because it would add more time to the visit.

Building on the lessons of the ACOVE-2 study, several new studies, in conjunction with the American College of Physicians and the Alzheimer’s Association, are in progress to develop products for physicians to use in their offices to improve quality of care. In another study at UCLA, the intervention has been modified by delegating management of five conditions—falls, incontinence, depression, dementia, and heart failure—to a nurse practitioner. All of the other elements of the ACOVE-2 intervention remain intact and the physician continues to manage the overall care of the patient. Physicians love it, and patients love it.

The Future Demographics

In 2011, the first baby boomers will be 65 years old; 75 million will follow. Several important trends will affect their health care.

Population-Based Health Care

Health care in the 21st century increasingly will be delivered by health care systems—some will be exclusively managed care and others will be a blend. Today, more than 50% of internal medicine practices consist of five physicians or fewer. Over the coming decades, this will likely change so that the vast majority of physicians will be part of larger-practice groups.

Medical practice will be increasingly consumer oriented and consumer driven. Baby boomers are more empowered than their parents were and will demand more from their health care.

The future of health care will be focused on populations. There will be three distinct populations of older persons: people who are not sick but may have chronic diseases, people who are sick and have multiple chronic diseases (and are functionally impaired), and people at the end of life. These populations will be cared for in three settings of care—hospital, nursing home, and community (including assisted living). Because people transition in and out of different care settings and have specific diseases that will be managed differently, the challenge will be to build systems of care for each of these groups.

People who are not sick but who may have chronic diseases need good preventive care—as compre-
hensive and inexpensive as possible—and good episodic care. In the future, most preventive care will be out of the physician’s hands entirely. Episodic care, such as treatment of a minor injury or a urinary tract infection, will increasingly be provided by the health care system and not necessarily the patient’s personal physician. This will require patients to trust the health care system rather than just the individual clinicians. KP probably most closely approximates this model at the beginning of the 21st century. People with chronic diseases, whether sick or not, need care—with an identifiable physician on the team—employing principles of disease management, health care self-management, and shared decision making.

For people who are sick and functionally impaired, the physician will have to be intimately involved with the care management team. The health care system has to adopt these people—they are our responsibility and we cannot let them stray off the beaten path. An important part of their care is ongoing active discussions about prognosis, quality of life, and preferences for care.

End-of-life care should begin early, identifying people who are in the last couple of years rather than last couple of weeks or months of their lives. KP is again in the lead. Patients need to trust that their physicians will not deprive them of needed care. They must feel confident that the care provided will be comprehensive and aggressive, albeit with different goals. For these patients, care will have to be so well orchestrated that when the patient dies, everyone—the patient, the physician, the team, and the family—would say that everything was done right.

Finally, care for all three of these populations will require a flow of clinical information such that care is seamless among all health care providers.

**Technology**

Technology is still a genie in the bottle—the full use of technology has not been realized. The electronic health record is the most prominent and most imminent. However, many other kinds of technology are also coming, particularly those that use remote monitoring and telemedicine (eg, robotic surgery and virtual intensive care units) and those that use machinery to perform human functions (eg, artificial retina, hepatic dialysis). All of these will change the way physicians practice medicine.

**Physicians’ Roles**

Medicine has been on a relentless march toward specialization, which has been a core economic principle for centuries. As Adam Smith said in 1776, “Each individual becomes more expert in his own peculiar branch, more work is done upon the whole, and the quantity of science is considerably increased by it.” In plain English, that means that we do well what we do often, and we cannot keep up with everything. In the future, there will be more specialists—both traditional specialists and emerging disciplines such as palliative care, which received approval for American Board of Medical Specialties certification in 2006. In the future, there may be certification or focused recognition for new specialties such as women’s health and HIV diseases and for care focused on specific settings. The hospitalists are the first of these, but skilled nursing facility specialists and home carists may follow. Moreover, primary care physicians (PCPs) are specialists. Coordinating care of the entire patient and being the patient’s advocate is a unique and special discipline.

While continuing to provide some direct one-on-one care, in the future, more PCPs will be leading teams that are comanaged with other clinicians. In these care models, physicians will focus on the tasks that they do best. They are very good at determining the patients’ objectives, collecting and synthesizing selective data, determining the medical realities, negotiating a treatment plan, monitoring and revising a treatment plan, and being the patient’s advocate. The last of these tasks is particularly important. For frail older persons, sometimes the PCP will call the surgeon to argue for an operation on a patient and at other times will call the surgeon to argue against an operation.

Consultants will increasingly advise on extremely complicated and rare cases, provide support for PCPs by placing consultant notes on the chart, help PCPs and teams develop protocols, give curbside consults, and perform procedures.

**Conclusion**

Current health care is lacking. Reorganizing health care is not only possible but also necessary to achieve better outcomes. Physicians’ roles will be very different over the next two decades: they need to think differently, be more innovative, encourage experimentation, and fail. It is okay to fail. If you experiment and fail, you can learn what did not work, and then you can try again. Eventually, you get it right. If you stop experimenting, if you stop innovating, you can never get any better.

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Systems Approaches to Improve Quality, Performance, and Efficiency in the Care of Older Adults

References


In All Things

In necessariis, unitus;
In necessary things, unity;

In dubiis, libertas;
In doubtful things, liberty;

In omnibus, caritas.
In all things, compassion.

— Augustine of Hippo, 354-430.
Catholic saint and preeminent Doctor of the Church