The “Dis-location” of U.S. Medicine — The Implications of Medical Outsourcing

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When a patient in Altoona, Pa., needs an emergency brain scan in the middle of the night, a doctor in Bangalore, India, is asked to interpret the results. Spurred by a shortage of U.S. radiologists and an exploding demand for more sophisticated scans to diagnose scores of ailments, doctors at Altoona Hospital and dozens of other American hospitals are finding that offshore outsourcing works even in medicine. . . . Most of the doctors are U.S-trained and licensed — although there is at least one experiment using radiologists without U.S. training.

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Until recently, the need to take a patient’s history and perform a physical examination, apply complex techniques or procedures, and share information quickly has made medicine a local affair. Competition, too, has played out between crosstown medical practices and hospitals. Although there have always been patients who chose to travel for care — making pilgrimages to academic meccas for sophisticated surgery, for example — they were exceptions.

This localization was largely a product of medicine’s physicality. To examine the heart, the cardiologist could be no farther from the patient than his or her stethoscope allowed, and data gathering required face-to-face discussions with patients and sifting through paper files. But as health care becomes digitized, many activities, ranging from diagnostic imaging to the manipulation of laparoscopic instruments, are rendered borderless. The offshore interpretation of radiologic studies (see p. 662) is proof that technology and the political climate will now permit the outsourcing of medical care, a trend with profound implications for health care policy and practice.

Skyrocketing health care costs are increasingly seen as unsustainable drains on public coffers, corporate profits, and household savings. Concern about these costs has led to wide-ranging cost-cutting efforts, often accompanied by attempts to improve quality and safety. In other areas of the economy, a similar search for cost savings and value has
created a powerful impetus for outsourcing. Although corporate globalization has been controversial, when the forces of protectionism have butted up against the demand of consumers for decent products at low prices and the desire of shareholders to maximize returns, outsourcing has usually triumphed.

Although outsourcing is often motivated by the desire for cost reduction, health care's version may offer substantial advantages for patients. For example, many hospitals now purchase interpretation services from outside companies, whose interpreters often speak a range of languages that individual hospitals cannot match. Outsourcing could also provide patients with access to specialized care that would otherwise be unavailable. A group of mammography experts, for example, could read remotely transmitted mammograms obtained at community hospitals, replacing less specialized radiologists. Herzlinger praised the "focused factory" in the predigital era, using examples (such as the "hernia hospital") that required the physical presence of patients. In a "dis-located" world, patients may benefit from some of the quality advantages of focused factories without the burdensome travel.

Outsourcing is often initially endorsed by local providers, since the off-site professionals begin by doing work the locals are happy to forgo, such as nighttime reading of radiographs. (Most of today's overseas teleradiology is designed to capitalize on time differences — Indian radiologists read films while U.S. radiologists are sleeping.) If the arrangement meets its goals (whether these are

Imagine two patients arriving in the emergency department of a Maine hospital at midnight. The first has a presentation consistent with pulmonary embolism; the second, appendicitis. A decade ago, the first patient might have been started on heparin therapy and scheduled for an early-morning ventilation-perfusion scan. The second patient would have been seen by a surgeon, who would have made a judgment call regarding the diagnosis of appendicitis and the need for surgery.

Today, both of these patients and hundreds of others like them would receive middle-of-the-night CT scans, taxing the hospital's radiologists. But midnight in Bangor, Maine, is 10:30 a.m. in Bangalore, India. There — and in Switzerland, Australia, and Israel — sit teams of radiologists ready to read the scans and fax their findings back to the United States (urgent findings are phoned back). "You can't reach over and slap [the radiologist] on the back, but every other aspect of the interaction is preserved," says Dr. Arjun Kalyanpur, a Yale-trained radiologist who runs Teleradiology Solutions, a "nighthawk" company based in Bangalore. In published studies of teleradiology, reports of technical problems have been rare, and the readings have been rapid (average turnaround, one hour) and accurate.

The American College of Radiology (ACR) has, unsurprisingly, stated that it is "very concerned" about overseas teleradiology, though its concern is tempered by a recognition that the practice fills a vacuum left by its own members, who would like to sleep at night. The ACR recommends that radiologists who are performing distant readings be board-certified and carry licenses and malpractice coverage in the state where the image was obtained and appropriate credentials at the source facility.

Several hundred U.S. hospitals use overseas teleradiology services. Industry leaders, such as Teleradiology Solutions, NightHawk Radiology Services, and Virtual Radiologic, state that they adhere to the ACR guidelines with respect to licensure, insurance, and hospital privileges. As for compensation, regulations of the Centers for Medicare and Medicaid Services (CMS) prohibit payments to providers outside the United States — an obstacle that many of the companies finesse by providing a "preliminary report," which is later followed by a U.S. radiologist's "final primary report." The overseas radiologists are paid directly (by the hospital or the local radiologists) at a rate of $50 to $75 per radiograph, whereas the local radiologists bill the payer. The ACR has voiced concern about this practice, because of the worry that some domestic radiologists are signing off on the "ghost-read" radiographs without carefully scrutinizing the films themselves.

Although most international teleradiology companies have followed the ACR licensure and credentialing guidelines, in 2003, the Indian technology giant Wipro "tested the waters" (in the words of one Wipro executive) by using Indian radiologists who were nei-
saving money, getting a late-night dictation into the chart by morning, or allowing a radiologist a full night's sleep), its scope is bound to grow, as administrators consider other candidates for outsourcing — analysis of pathology specimens or reading of echocardiograms and even colonoscopies. By severing the connection between the "assay" and its interpretation, digitization allows the assay to be performed by a lower-wage technician at the patient's bedside and the more cognitively complex interpretation to be performed by a physician who no longer needs to be in the building — or the country.

Another illustration of "dislocation" is the electronic intensive care unit (ICU), in which off-site intensivists monitor patients by closed-circuit television. Streams of physiological data appear in real time on a remote screen, allowing the off-site physician to advise local providers, sometimes even entering orders remotely into the hospital's computer system. Although electronic ICUs are currently marketed as a response to the national shortage of critical care physicians, they may ultimately compete with on-site intensivists. And if lower-wage foreign intensivists develop the knowledge and skills of their U.S. counterparts, they may enter this market as well, following the path of the "nighthawk" radiologists.

Some observers will see the outsourcing of medical care as a positive development. To the extent that outsourcing focuses on improved quality or access to specialized care — allowing patients to obtain services from the best provider, not just the best in town — it will be hard to criticize it without seeming unduly parochial. In fact, when applied toward these goals, outsourcing represents an extension of telemedicine programs that have long granted some rural providers access to big-city expertise for complex problems.

Provided that quality is not compromised, outsourcing that is focused on the bottom line may also have virtue, particularly for patients who must pay a portion of their bill, for payers, and for fiscally challenged hospitals. Even domestic providers may celebrate outsourcing that frees them from off-hours duties or permits round-the-clock services. Finally, health care outsourcing is the sort of "disruptive innovation" that can transform traditional processes and relationships, ultimately leading to benefits that are hard to anticipate today.

But harm may also result — particularly if, as seems likely, the main driving force proves to be saving money, rather than improving quality. First, to the extent that some care will be provided by anonymous people in cyberspace rather than by local doctors, distinguishing competent providers from hucksters will become even more difficult. In addition, having service providers operating under different laws and, potentially, value systems can create opportunities for new kinds of mischief.

Second, if outsourcing erodes the economic underpinnings of local health care, there will be irremediable consequences — and not only for displaced providers. If the United States loses its do-


meric textile or automobile industry because of foreign competition, Americans mourn the loss of jobs, but no locale actually needs a car company or a sock manufacturer. Patients, however, will always need local doctors and hospitals.

In light of these potential problems, it is easy to rail against this trend or to pray that it all happens after we retire. And observing the snail's pace of the quality, safety, and information-technology movements in health care one might predict that full-blown medical outsourcing is decades away. But judging by the speed with which high-tech call centers have migrated to Bangalore, the pace of change might actually be shockingly rapid.5

People and institutions that are harmed by outsourcing will not take it sitting down, and I expect to see a flurry of initiatives to protect the status quo. Physicians and specialty societies will undoubtedly use the tools of legislation, licensure, certification, and reimbursement to thwart perceived threats to their livelihoods. Such efforts will nearly always be framed as protections of quality or patient safety, though some will be difficult to defend against charges of hypocrisy. (After all, it is tricky to argue that an offshore radiologist is sufficiently competent to read U.S. films at 2 a.m. but not at 2 p.m.) Nevertheless, many of these worries will be valid, and it will be left for patients and policymakers to differentiate legitimate fears from protectionism.

Though defensiveness and resistance are inevitable, I believe that a more productive strategy is for local caregivers, advocacy groups, and institutions to welcome—or at least accept—outsourcing that serves their patients' interests and to focus their attention on improving the quality and efficiency of the care they themselves deliver. In the digitally globalized world, the painful truth is that the only durable protection against the outsourcing of services is to provide the highest quality of care at the lowest cost.

As they struggle to improve their technical skills and delivery systems to meet this new challenge, local doctors and hospitals should not miss the opportunity to preserve and enhance the low-tech practices that are best delivered in person. Patients will not willingly part with doctors who have shown them true empathy in times of need. The radiologist who not only reads his colleagues' radiographs but also discusses important findings with them may be less likely to be replaced by a practitioner living a dozen time zones away. Competition may make us more responsive to