The use of information technology in diagnosing, treating and monitoring patients — known as telemedicine — is adding a new dimension to modern health care. Entrepreneurs are using the telephone, the Internet and personal computers for innovative solutions to traditional problems of health care delivery. These advances are not only making care more accessible and convenient, they are also raising quality and containing medical costs.

Problems with the Traditional System. Several factors contribute to the costly and inefficient delivery of traditional health care services.

Patients find doctors harder to see. Seeing a doctor is becoming increasingly difficult. According to a study of medical care access between 1997 and 2001 [see Figure I]:

- One-third of patients reported problems seeing their primary care physician.
- Nearly one-quarter reported problems taking time from work to see a physician.
- Twelve percent reported their doctor was hard to reach by phone or too far away.

Patients also have trouble contacting physicians outside the traditional office visit. Although lawyers and other professionals routinely consult with their clients by telephone and by e-mail, very few doctors currently consult by telephone and less than one-in-four communicate with patients electronically.

Patients overuse emergency rooms. In a given year, 55 percent of the 114 million visits to hospital emergency rooms are for nonemergencies. A 2006 survey of California hospitals found that nearly half of ER patients thought they could have resolved their medical problem with a visit to their doctor, but were unable to obtain timely access to care. Moreover:

- Seventy-one percent of Medicaid enrollees and 63 percent of privately insured visitors said seeking Emergency Room care was more convenient than seeking care from their doctor.
- More than half of both groups experienced symptoms after normal office hours or on a weekend, when their physician was not available.
- Nearly half of patients who visited an ER said they could not get a timely doctor’s appointment [see Figure II].

Patients aren’t adequately informed. The amount of information physicians need to convey to patients during an office visit has increased over the years, but the average time they spend with individual patients has remained roughly the same. The proportion of physicians saying they do not have enough time to spend with patients rose nearly 24 percent between 1997 and 2001, from 28 percent to 34 percent. Moreover, according to the Journal of the American Medical Association, patients usually want more information about their medical condition than they receive from their doctors — and with good reason:

- During a 20-minute office visit, physicians spend less than one minute planning treatment, on average.
- Doctors discuss options and help patients arrive at a treatment based
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- About half the time, doctors fail to ask patients whether they have questions.

**Benefits of Telemedicine.** Information technology has the potential to restructure medical care in ways that can solve many of these access problems, while reducing costs and improving the quality of care. Already, entrepreneurial providers are creating services outside the third-party payment system that allow patients to pay directly for access to physicians or nurses electronically or by telephone.

**Case Study: Convenient care by TelaDoc.** TelaDoc Medical Services is a phone-based medical consultation service that links physicians, patients, and health plans across the country. The service is not intended to replace primary care providers, but it allows patients who are away from home to obtain less expensive and time-consuming treatment by contacting a local physician, rather than visiting an emergency room or expensive urgent care center.

An individual enrollee pays $35 for each consultation (compared to an emergency room visit costing an average of $383), and the service is available around the clock. For efficiency, medical records are digitized and placed online, allowing medical personnel access from anywhere in the country. TelaDoc guarantees a physician will return the call within three hours or the consultation is free, but customer surveys show that most calls are returned within 30 to 40 minutes. Moreover:

- A physician returns a patient’s phone call within 30 minutes (or less) 50 percent of the time.
- Seventy-five percent of patient calls are returned within one hour.
- Eighty-eight percent of those who used the service reported they saved time and money compared to a traditional office visit or a trip to the emergency room.

A recent analysis by the consulting firm Mercer found that 97 percent of users rated the service good or outstanding, and 98 percent said they would use it again.

**More Benefits of Telemedicine.** Telemedicine can improve adherence to protocols and increase the convenience of treatment for patients with chronic ailments. For instance, patients can use an electronic device to monitor their vital signs at home and transmit the data via computer modem to self-report their health status to medical staff. A study of patients with congestive heart failure found that those who used remote monitoring required rehospitalization only half as frequently as those who depended on traditional office visits.

Additionally, transmitting data via the Internet allows U.S. health care providers to collaborate with qualified, low-cost providers in other countries who perform labor-intensive tasks that do not require the physical presence of a physician, such as interpreting ultrasounds, CT scans and MRIs. Increasingly, information technology will make distance irrelevant and medical personnel will be able to provide medical services regardless of their location.

**Obstacles to Wider Use of Telemedicine.** An antiquated third-party payment system is the primary obstacle to the growth of telemedicine. Because 87 percent of medical costs are paid by someone other than the patient (such as insurers, employers or government), providers have little incentive to create innovative services that benefit patients directly. Additionally, state laws and regulations prevent physicians licensed in one state from practicing in other states. This impediment keeps doctors from providing crucial medical services, such as writing prescriptions or completing follow-up consultations remotely, to patients who have left the state. Similar regulations keep foreign doctors from providing telemedicine services. Telemedicine can improve the quality and increase the efficiency of patient care, but these barriers must be lowered in order to realize its full potential.

Devon Herrick is a senior fellow with the National Center for Policy Analysis.

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