NEW YORK – A famous claim in economics is that the cost of services (such as health care and education) tends to increase relative to the cost of goods (such as food, oil, and machinery). This seems right: people around the world can barely afford the rising health-care and school-tuition costs they currently face – costs that seem to increase each year faster than overall inflation. But a sharp decline in the costs of health care, education, and other services is now possible, thanks to the ongoing information and communications technology (ICT) revolution.

The cost of services compared to the cost of goods depends on productivity. If farmers become much better at growing food while teachers become little better at teaching kids, the cost of food will tend to fall relative to the cost of education. Moreover, the proportion of the population engaged in farming will tend to fall, since fewer farmers are needed to feed the entire country.

This is the long-term pattern that we’ve seen: the share of the workforce in goods production has declined over time, while the cost of goods has fallen relative to that of services. In the United States, around 4% of the population in 1950 was employed in agriculture, 38% in industry (including mining, construction, and manufacturing), and 58% in services. By 2010, the proportions were roughly 2%, 17%, and 81%, respectively. In the meantime, health-care and tuition costs have soared, along with the costs of many other services.

But a productivity revolution in service-sector delivery is now possible. As a professor, I feel it in my own classroom. Ever since I began teaching 30 years ago, it had seemed that the technology was rather fixed. I would stand before a class and give a one-hour lecture. Sure, the blackboard gave way to an overhead projector, and then to PowerPoint; but, otherwise, the basic classroom “production system” seemed to change little.

In the past two years, everything has changed – for the better. At eight on Tuesday mornings, we turn on a computer at Columbia University and join in a “global classroom” with 20 other campuses around the world. A professor or a development expert somewhere gives a talk, and many hundreds of students listen in through videoconferencing.

Information technology is revolutionizing the classroom and driving down the costs of producing first-rate educational materials. Many universities are putting their classes online for free, so that anyone in the world can learn physics, math, or economics from world-class faculty. At Stanford University this fall, two computer-science professors put their courses online for students anywhere in the world; now they have an enrollment of 58,000.

The same breakthroughs now possible in education can occur in health care. The US health-care system is notoriously expensive, partly because many of the key costs are controlled by the American Medical Association and private-sector health-insurance companies, which act like monopolists, driving up costs. Such monopoly pricing should be ended.

Yet there are other reasons for high health-care costs. Many people suffer from chronic ailments, such as heart disease, diabetes, obesity, and depression and other mental disorders. These diseases can be expensive to address if they are poorly managed and treated. Far too many people end up in
Services without Tears - Jeffrey D. Sachs

The emergency room and the hospital because they lacked the advice and help to keep their conditions under control without institutional care, or even to prevent their disorders entirely.

Now information technology is coming to the rescue. Innovative companies like CareMore in California are using ICT to keep their clientele healthy and out of the hospital. For example, when CareMore’s patients step on the scale at home each day, their weight is automatically transmitted to the health-care unit. If there is a dangerous weight swing, which could be caused by congestive heart failure, the clinic brings the patient in for a quick examination, thereby heading off a potentially devastating crisis.

These innovative companies’ approaches combine three ideas. The first is to use ICT to help individuals monitor their health conditions, and to connect individuals with expert advice. The second is to empower outreach workers (sometimes called “community health workers”) to provide home-based care in order to prevent more serious illnesses and to cut down on the high costs of doctors and hospitals.

The third idea is to recognize that many illnesses arise or become worse because of individuals’ social circumstances. Perhaps the patient is isolated, lonely, suffering from depression, out of work, or facing some other personal or family calamity. If these social conditions go unaddressed, they may give rise to an expensive, even deadly, medical condition.

Smart healthcare is therefore holistic, helping people not only as patients arriving in the emergency room, but also as individuals and family members in their own homes and communities. Holistic health care is more humane, effective, and cost-efficient. The ICT revolution provides the means to achieve holistic health care in new and powerful ways.

In economic terms, information and communications technologies are “disruptive,” meaning that they will outcompete the existing, more expensive ways of doing things. Implementing disruptive technologies is never easy. Existing high-cost producers, especially entrenched monopolists, resist. National budgets may continue to favor the old ways.

Nevertheless, the promise of great cost savings and major advances in service delivery is at hand. The world’s economies, rich and poor alike, have much to gain from accelerated innovation in the information age.

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