

# Health Care Needs an Internet Revolution

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We live in an era that has seen our knowledge of medical science and treatment expand at a speed that is without precedent in human history. Today we can cure illnesses that used to be untreatable and prevent diseases that once seemed inevitable. We expect to live longer and remain active and productive as we get older. Ongoing progress in genetics and our understanding of the human genome puts us on the cusp of even more dramatic advances in the years ahead.

But for all the progress we've made, our system for delivering medical care is clearly in crisis. According to a groundbreaking 1999 report on health-care quality published by the Institute of Medicine (the medical arm of the National Academy of Sciences) as many as 98,000 Americans die every year as a result of preventable medical errors. That number makes the health-care system itself the fifth-leading cause of death in this country.

Beyond the high cost in human life, we pay a steep financial price for the inability of our health-care system to deliver consistent, high-quality care. Study after study has documented the billions of dollars spent each year on redundant tests, and the prolonged illnesses and avoidable injuries that result from medical errors. The impact ripples through our society, limiting our ability to provide health care to everyone who needs it and threatening the competitiveness of U.S. businesses, which now spend an average of \$8,000 annually on health care for employees.

At the heart of the problem is the fragmented nature of the way health information is created and collected. Few industries are as information-dependent and data-rich as health care. Every visit to a doctor, every test, measurement, and procedure generates more information. But every clinic, hospital department, and doctor's office has its own systems for storing it. Today, most of those systems don't talk to each other.

Isolated, disconnected systems make it impossible for your doctor to assemble a complete picture of your health and make fully informed treatment decisions. It also means that the mountain of potentially lifesaving medical information that our health-care system generates is significantly underutilized. Because providers and researchers can't share information easily, our ability to ensure that care is based on the best available scientific knowledge is sharply limited.

There is widespread awareness that we need to address the information problem. In 2001, the Institute of Medicine issued a follow-up report on health-care quality that urged swifter adoption of information technology and greater reliance on evidence-based medicine. In his 2006 State of the Union address, President Bush called on the medical

system to "make wider use of electronic records and other health information technology."

But increased digitization of health-care information alone will not solve the problems we face. Already, nearly all procedures, test results and prescriptions are recorded in digital form -- that's how health-care providers transmit information to health insurers so they can be paid for their work. But patients never see this data, and doctors are unable to share it. Instead, individuals do their best to piece together the information that they think their caregivers might need about their medical history, the medications they take and the tests they've undergone.

What we need is to place people at the very center of the health-care system and put them in control of all of their health information. Developing the solutions to help make this possible is an important priority for Microsoft. We envision a comprehensive, Internet-based system that enables health-care providers to automatically deliver personal health data to each patient in a form they can understand and use. We also believe that people should have control over who they share this information with. This will help ensure that their privacy is protected and their care providers have everything they need to make fully-informed diagnoses and treatment decisions.

I believe that an Internet-based health-care network like this will have a dramatic impact. It will undoubtedly improve the quality of medical care and lower costs by encouraging the use of evidence-based medicine, reducing medical errors and eliminating redundant medical tests. But it will also pave the way toward a more important transformation.

Today, our health-care system encourages medical professionals to focus on treating conditions after they occur -- on curing illness and managing disease. By giving us comprehensive access to our personal medical information, digital technology can make us all agents for change, capable of pushing for the one thing that we all really care about: a medical system that focuses on our lifelong health and prioritizes prevention as much as it does treatment. Putting people at the center of health care means we will have the information we need to make intelligent choices that will allow us to lead healthy lives -- and to search out providers who offer care that does as much to help us stay well as it does to help us get better.

The technology exists today to make this system a reality. For the last 30 years, computers and software have helped industry after industry eliminate errors and inefficiencies and achieve new levels of productivity and success. Many of the same concepts and approaches that have transformed the world of business -- the digitization of information, the creation of systems and processes that streamline and automate the flow of data, the widespread adoption of tools that enable individuals to access information and take action -- can be adapted to the particular requirements of health care.

No one company can -- or should -- hope to provide the single solution to make all of this possible. That's why Microsoft is working with a wide range of software and hardware companies, as well as with physicians, hospitals, government organizations, patient

advocacy groups and consumers to ensure that, together, we can address critical issues like privacy, security and integration with existing applications.

Technology is not a cure-all for the issues that plague the health-care system. But it can be a powerful catalyst for change, here in the U.S. and in countries around the globe where access to medical professionals is limited and where better availability of health-care information could help improve the lives of millions of people.

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