Creating a 21st-Century Intelligent Health System

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In most areas of life, Americans enjoy the ease and convenience offered by advances in technology, communications, and transportation. Every day we experience the 21st-century model of America, which is one of effectiveness, accuracy, speed, flexibility, efficiency, lower cost, more choices, and greater achievement. We can shop online, compare prices for goods and services, and when decisions need to be made, we have access to a wide array of information sources to assist in making those decisions. In short, Americans enjoy great latitude in our power to determine what is best for us.

This is not, however, the case when it comes to health and healthcare. In our current healthcare system, individuals are dependent on a structure that has resisted the natural progress and modernization achieved by market-oriented, 21st-century industries. The information age has been leaving health behind.

Although it is the nature of a science- and technology-based entrepreneurial free market to provide more choices of higher quality at lower cost, in the healthcare sector, prices continue to rise, quality is inconsistent, and individuals lack the information, incentives, and power to make choices.

The Urgency of Health Transformation: Not a Choice, but a Necessity

The area of health and healthcare is one where transformation is not a choice, but a necessity. That reality has been driven home by a number of recent events and ever-growing challenges:

Health and Homeland Security

Hurricane Katrina served as a wake-up call. By homeland security standards, it was not an unexpected or exceptionally large event. Yet we witnessed a collapse of the healthcare system in the Gulf in its aftermath. Millions of paper records were lost at the very time they were most needed. If we were incapable of responding to a disaster on the scale of Katrina, imagine what would happen if we were required to withstand multiple crises simultaneously—something that we have to accept as a very real possibility in today's world.

Demographic Changes: The Aging of America

In 1965, the average life expectancy was 70.2 years. Today it is older than age 77 and is expected to increase to 78.5 years by 2010. It is a testament to American innovation and values that we are living longer. Our ability to extend life is a great success but presents some enormous challenges. We must face the reality that 76 million baby boomers are nearing retirement and consider how their retirement will affect the future of our health and healthcare system.

Medical Errors and Unnecessary Deaths

A 1999 report by the Institute of Medicine revealed that as many as 98,000 people die in our hospitals annually due to medical error. That's the equivalent of a jet crashing and killing 250 Americans every day. We are 2,000 times more likely to die in a hospital from a
medical error than in a civilian air crash. Furthermore, nonfatal medical errors often lead to illness or disability. In America, statistics like these are simply unacceptable. And, with public awareness increasing, there is a growing demand that our leaders do something to fix our ailing system.

**Disparities in Outcomes**

The increasing evidence of disparities in outcomes is a critical factor that makes a compelling and tragic case for why a new system of health and healthcare is not just a choice but an absolute necessity. At the top of the list are racial disparities. Recent studies have shown that, relative to whites, infant mortality rates are 2.5 times higher for blacks, life expectancy is 10 years less, and blacks have significantly higher mortality rates from heart disease, stroke, and cancer. The racial divide when it comes to health and healthcare is a moral issue that simply cannot be dismissed, and a tragic reality that is at the heart of the need for change is our current system.

**The Epidemic of Diabetes and Obesity**

The number of type 2 diabetes cases in the United States has doubled in the past 2 decades to an estimated 20 million (when undiagnosed cases are included). This makes diabetes the country's fastest-growing public health problem. Furthermore, the Centers for Disease Control and Prevention (CDC) predicts that 1 in 3 American children born in 2000 will join the ranks of those afflicted with type 2 diabetes. Diabetes is the only major disease with a death rate that is still rising—up 22% since 1990. It is also the leading cause of kidney failure, blindness, and nontraumatic amputation, and a major contributing cause of heart disease and stroke. The American Diabetes Association estimates that, when we include both treatment and lost productivity, diabetes costs the U.S. economy about $132 billion per year.

Obesity, primarily a result of Americans’ eating and exercise habits, is a major contributor to the increase in diabetes. The most recent figures from the CDC show that 66% of U.S. adults—or about 130 million people—are either overweight or obese. The percentage of overweight young people has more than tripled since 1980. Among children aged 6 to 11 years, 18.8% are overweight; of those aged 12 to 19 years, 17.4% are overweight.

**Shortage of Healthcare Workers**

Our 20th-century system of healthcare has created an environment that has led to a growing and critical shortage of healthcare professionals. The U.S. Department of Labor predicts that the shortfall of nurses, which has existed since 1998, will increase to a shortage of 400,000 to 800,000 by 2014. Meanwhile, the U.S. Council on Graduate Medical Education, Physician Workforce Policy Guidelines for the United States, 2000-2020 projects a shortage of 85,000 physicians by 2020.

**The Uninsured**

To put it simply, coverage for all Americans is a moral imperative. Access to health insurance is the equivalent of access to healthcare. Eighteen thousand people die every year because they are uninsured. According to the Institute of Medicine, uninsured adults younger than age 65 have a 25% higher death rate than their insured counterparts.

The ripple effects of being uninsured and having poor health are felt throughout society. Uninsured children have impaired development and poor school performance. Uninsured adults have more absences from work, more unscheduled sick days, and greater rates of disability. The cost of treating the uninsured is listed as one of the major challenges facing hospitals today.

**Unsustainable Increase in Costs**

The cost of healthcare is going to force us to rethink the entire system. Government healthcare spending alone is currently 6.6% of the gross domestic product; however, at the current trend, it is predicted to climb to over 32% by 2050!

Meanwhile, employers are seeing healthcare spending become a major corporate issue. According to General Motors, $1,500 of the cost of every car is a result of the cost of providing healthcare to their employees. Small businesses are increasingly making the decision not to insure their workers because the costs of doing so have become unsustainable. And, with more and more of the costs of insurance passed on
to individuals from their employers, Americans are becoming increasingly aware of the exorbitant cost of the system. Premiums for family coverage in employer-sponsored health insurance plans have increased by 78% since 2001.\(^{10}\)

**The Solution: Replacing the Current Healthcare System With a 21st-Century Intelligent Health System That Saves Lives and Saves Money for Every American**

In a 21st-Century Intelligent Health System, the individual is the center of knowledge, decision-making, and responsibility for his or her own health. Knowledge of health and finances is available in the most accurate, least expensive, and most convenient manner possible. In a 21st-Century Intelligent Health System, individuals have accurate, timely, personalized knowledge about their health and treatment options, including information about cost and quality. They have the assurance that their treatment is based on the most up-to-date evidence-based medicine, and the focus is on preventive care and early intervention. The system encourages and rewards wise healthcare purchasing decisions and offers more choices of higher quality at lower cost.

A key test for any new system is its ability to provide affordable access to quality care for the poorest and sickest among us. The elimination of health disparities must be a critical goal: No one can be left behind. A 21st-Century Intelligent Health System must provide access to affordable coverage for those currently uninsured.

A 21st-Century Intelligent Health System has 3 essential components.

**Component One: Centered on the Individual**

Putting individuals at the center of the system requires that they be given the incentives, the information, and the power to make wise choices. However, the 20th-century system we inherited is one in which individuals seldom have information about cost or quality, have no financial incentives for wise consumption, and generally have decisions made for them rather than choosing for themselves. Starting with the decision in 1943 to go to a third-party system, we’ve turned healthcare into a rental car. The problem is, almost no one washes a rental car.

**Right to Know**

Allowing individuals to choose will work only if we also provide them with the information needed to make informed choices. Yet the current healthcare system is absurdly secretive. When it comes to healthcare, Americans typically have no way of comparing the cost and the quality of the various health services, products, or providers they are considering. This situation is tantamount to asking someone to shop for a car when the dealer hides the prices, rolls back the odometers, and does not disclose that the lot is filled with a fleet of rental cars.

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**Personal Responsibility**

In a 21st-Century Intelligent Health System, individuals have certain rights, including the right to know cost and quality information and the right to be assured that their providers are practicing the best standards of care. But they also have responsibilities.

First, individuals are expected to be informed and to use that information to make wise decisions. Second, individuals are expected to engage in (and encourage their children or family to engage in) healthy behaviors, related to both nutrition and exercise, that are proven to prevent illnesses and complications. If they develop a chronic illness, they are expected to learn and follow best standards of care to avoid costly complications. Third, individuals are expected to help pay for their care. Everyone should be required to participate in the insurance system. Those whose incomes are too low should receive vouchers or tax credits to help them buy insurance. Those who oppose the concept of insurance should be required to post a bond to cover costs. Allowing individuals to pass their health costs on to others reinforces the attitude that it’s not their problem and adds to the irresponsible, unhealthy behaviors that are bankrupting the current system.

**Personalized Health System**

The 21st-century individual-centered system will be a personalized system of health, resulting in dramatically better health for everyone. Imagine a future where tests will allow us to know exactly what combination of medicines will protect us from the specific diseases or
conditions to which we are most susceptible, based on our genetics. Consider a world where we know that health and treatment regimens are designed specifically for each individual.

We are already seeing glimmers of how the future of medicine is likely to change as we move toward a more personalized system. Not long ago, the newspapers ran a story about a drug that scientists learned, in reviewing years of data, had a stunning impact on preventing heart attacks in African American males. This was not the original purpose of the drug. Moreover, the drug had no such impact on white males. In a 21st-century, IT-rich, intelligent system, we will be able to recognize these patterns much more quickly and to share them more widely to prevent illnesses, thereby saving lives and money.

Component Two: IT and Quality

The personalized system of health we just described cannot be possible without a system that is IT-rich. The system must allow easy but secure sharing, analysis, and usage of information about health and health history and about the cost, quality, and outcomes of treatments we are considering. The difference between health and healthcare and other sectors of society when it comes to IT is dramatic. And it has had a dramatic impact on the lives—and deaths—of the American people.

Paper Kills

Paper kills. It is that simple. Instead of saving lives, our current paper system is often taking lives. With as many as 98,000 Americans still dying as a result of medical errors every year, ridding the system of paper-based records and quickly adopting health IT will save lives and money.

Each day that we refuse to move from a paper-based to an electronic system, people are dying needlessly. This is not just conjecture—health IT’s tremendous potential to saves lives and money is real and is happening in some of the most forward-looking practices and transformational institutions in our country.

Component Three: Health, Not Healthcare: Prevention, Early Detection, Self-Management, and Best Practices

The need to transform the current system from an acute care–focused system to one of prevention and early detection is evident.

Heart disease, the leading cause of death for both men and women in the United States, accounted for nearly 700,000 deaths in 2002. In 2005, heart disease was projected to cost $393 billion. It is the leading cause of death for American Indians, Alaska Natives, blacks, Hispanics, and whites. More than 300,000 people have bypass surgery in the United States each year, yet heart disease and its complications can often be prevented. Among people with heart disease, studies have shown that lowering cholesterol and high blood pressure can reduce the risk of dying of heart disease, having a nonfatal heart attack, and needing heart bypass surgery or angioplasty. For people without heart disease, studies have shown that lowering high blood cholesterol and high blood pressure can reduce the risk of developing heart disease in the first place.

A system focused on prevention rather than on acute care would provide the incentives and policies to support lifestyle changes needed to control cholesterol and blood pressure. A culture of physical activity and healthy diet choices would replace the current epidemic of inactivity and “fast food.” However, our current system, by providing reimbursement for volume of care rather than outcomes, discourages the type of care that prevents disease, complications, and acute episodes.

The same mindset is evident when it comes to the willingness of the system to pay for technologies and discoveries to keep us healthy. Using diabetes as an example, the current system’s tendency is to pay for dialysis and amputations but to refuse to pay for the education, the tools, or often the medications that can prevent these costly and tragic consequences. A system that takes advantage of 21st-century opportunities will be able to provide us with a whole new range of technologies, tools, and screening mechanisms that will allow us to stay healthier, avoid or delay many illnesses, and manage the illnesses we develop.

Two Futures

If Dr. Andy von Eschenbach is right, we may be able to eliminate cancer as a cause of death in the next 10 years. But even if we find the breakthroughs that would allow us to do this, if our current 20th-century system of delivery has not been transformed, it is likely that our own doctor might not adopt the necessary life-saving treatment for 17 years. In those 17 years, how many people will have died needlessly? How many wives or husbands, sisters or brothers, children or grandchildren?

It’s a potential scenario that gives us a startling glimpse into 2 futures: one in which we cling to the sta-
tus quo (or even magnify it through a single-payor, totally government-run system) and another in which we save countless lives and millions of dollars by replacing the current system with a 21st-Century Intelligent Health System.

The opportunities exist, the choices are clear, and the time for choosing is now. The choice is not just important, it’s a matter of life and death—not only for us but for our children, our children’s children, and Americans everywhere.

References

For inquiries or comments, please e-mail editorial@AHDBonline.com.

AHDB Stakeholder Perspective

The needs and tactical methods behind the transformation of the healthcare system are based on the injury it has inflicted to all 3 points of the value triangle: cost, quality, and access. Transforming the healthcare system involves changes to the categories, number, and function of every stakeholder to the process. Since human nature traditionally shuns radical change for fear of unexpected consequences, there exists considerable clamor by nearly all stakeholder sectors for transformation of the U.S. healthcare system, despite the increased life span in evidence today.

The cause for transformation can be ascribed, in part, to the number of major obstacles threatening healthcare: demographic challenges of the graying baby boomers, medical errors and unnecessary deaths, disparities in outcomes, epidemic of diabetes and obesity, shortage of healthcare workers, the uninsured, and unsustainable increases in costs.

The other reason for support for transformation involves the prospects for success if certain changes can be made: individual-centered medicine; information technology; health promotion; and disease prevention, early detection, self-management, and best practices.

The stakeholders who join the inevitable trend will tend to be winners, since healthcare transformation is now a given, the only question being the details of the next system.

- **MANUFACTURERS**: Having resisted change to the healthcare system ever since the 1980s, pharma is learning how to adapt by developing new drugs that deliver evidence-based, patient-centered, health improvements.

- **PAYORS**: No less conservative than pharma during this period, payors have learned that change can be good and have introduced a continuum of member-friendly plans to replace those that greatly limited choices and access. Indispensable players in the transformation process, payor autonomy will continue to erode in favor of increased transparency and collaboration with purchasers.

- **PURCHASERS**: Health-based medicine strategies are proving their financial worth to large employers, who can exercise control over their costs, while CMS must contend with underfunding. Until CMS receives sufficient government funding to pursue health-based models, cost-minimization remains a priority.

- **PROVIDERS**: Considerable work needs to be done to motivate recruitment of physicians and nurses. Cost-minimization casualties of payors and purchasers, providers will continue to be in short supply until new reimbursement models are in place.