

The **ABCs** of systemic healthcare reform

A plan for driving \$500 billion in annual savings out of the U.S. healthcare system.

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In the United States, growth in healthcare expenditures has outpaced the rest of the economy for the past forty years, and healthcare expenditures now represent more than 16% of the GDP. All forecasts expect this differential to continue with no end in sight. The need to slow or reverse the growth in healthcare costs is compelling; especially over the next thirty years as the baby boomers drive significant growth in healthcare resource utilization. President Obama recently said that the state of healthcare in the United States is “part of the [economic] emergency,” and that reform must be “intimately woven into our overall economic recovery plan.” It is our belief that a strategic investment in information technology (IT) can realize up to a \$500 billion annual reduction in healthcare expenditures. This generational opportunity to reconfigure the elements of our healthcare system must be seized.

The Money Is in the System: The ABCs of Systemic Healthcare Reform

Information Technology, widely and wisely adopted and supported by changes in policy, reimbursement methodologies and practice, will **enable** this potential half-trillion-dollar recurring savings in the cost of providing care in the United States. The savings will come from four primary areas: the first three, the ABCs of modern care, come from inside the healthcare organizations, while area D arises from eliminating the friction and righting misaligned incentives in the current reimbursement system.

- A. Automate** the current healthcare delivery system by implementing workflow and electronic medical record (EMR) systems. Estimated savings are between \$77 billion and \$100 billion net of the initial investment and incremental operating cost of the systems, according to a 2005 RAND study.ⁱ The savings will be derived as they have been in other automated industries, such as banking and retail, when manual work tasks are computerized. In its current state, healthcare

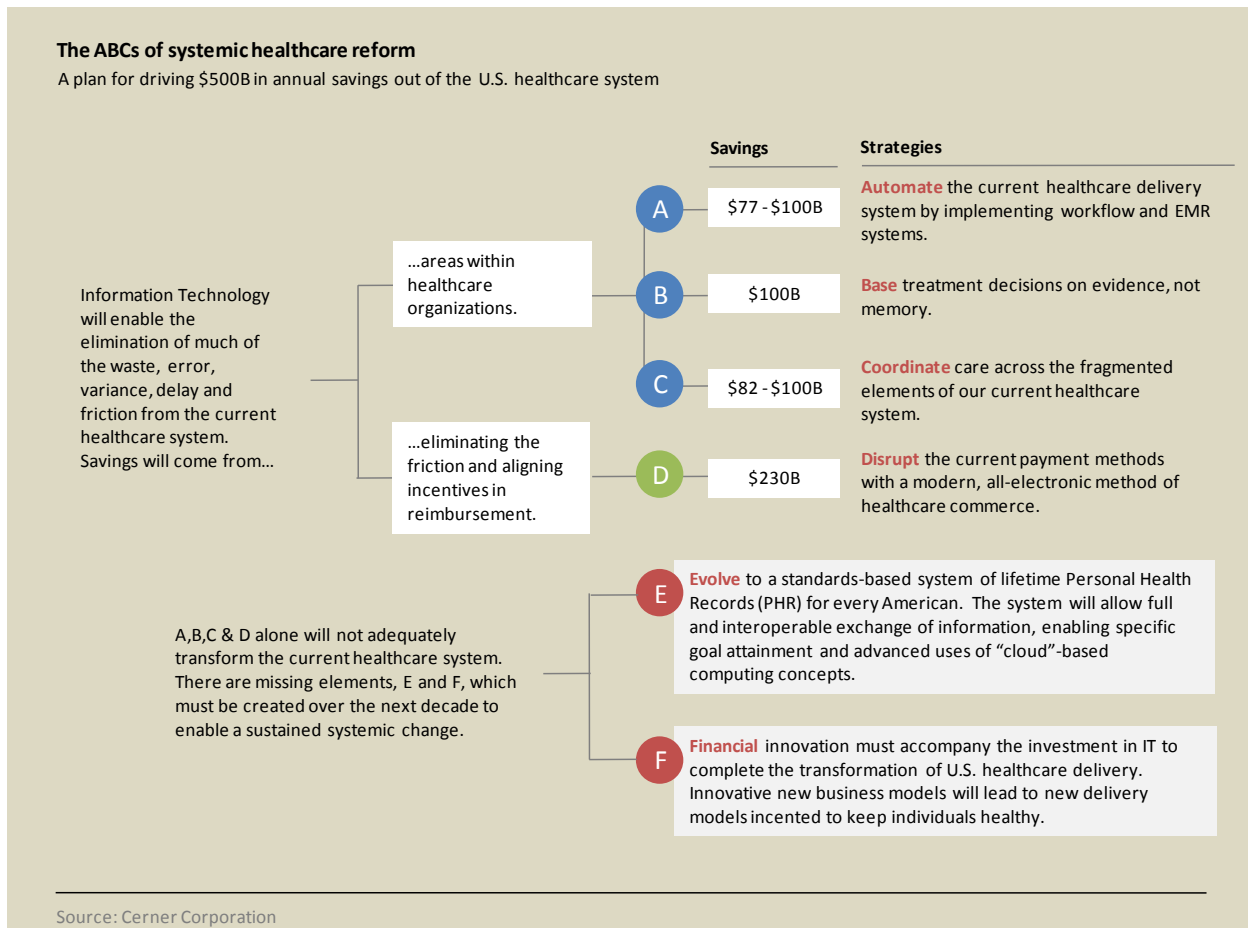
has lagged most industries in the adoption of information technology. Physicians write orders for diagnostic or therapeutic procedures on paper for others to read, interpret and transcribe. Clerks own the task of filing various documents from departments such as the laboratory and radiology in to the paper chart; if they fail to do so, frustrated physicians reorder the tests. Everyone scrambles when the chart is misplaced and an impatient physician demands its presence. The paper and film records always seem to be in another office, another town, another state, or another country when they are needed. These processes are inefficient and lead to numerous errors and delays, adding unnecessary cost.

- B. Base** decisions on **evidence**, not anecdotal memory. A 2003 study published in the *New England Journal of Medicine* examined the quality of care across the healthcare continuum and found that Americans receive the recommended healthcare services about half of the timeⁱⁱ. Once healthcare processes and records have been automated, a significant next-order benefit will arise from eliminating the widely documented variance in the current practice of care—variance that does not correlate with differences in outcome.ⁱⁱⁱ Although no meta-analysis has yet attempted to quantify these savings, in aggregate they are very significant, and supported by much research and published studies. A peer-reviewed study published in 2009 in *Archives of Internal Medicine* concluded that “Hospitals with automated notes and records, order entry, and clinical decision support had fewer complications, lower mortality rates, and lower costs.”^{iv} The 1999 benchmark study by the Institute of Medicine estimates that preventable medical errors alone account for up to 100,000 unnecessary deaths in American hospitals each year.^v Their research focused only on process errors in which doctors, nurses and other medical staff did not do the right thing at the right time for the right patient, not on the cost of failing to treat. Estimates vary, but almost all professionals involved in healthcare practice would agree to the enormity of the benefits of evidence-based medicine. We conservatively expect another \$100 billion in savings when HIT is completely implemented, in addition to all of the lives saved.
- C. Coordinate** care across the fragmented elements of our current healthcare system. This coordination could realize another \$82 billion to \$100 billion in savings, according to the 2005 RAND study. Management of chronic conditions, which requires complex interactions between primary care providers and specialists, has become the number one challenge of the current fragmented healthcare system. Ubiquitous access to medical information between providers would enable a coherent system of care, which would lead to improved quality of care, significant reduction in redundant testing, and reduced errors.
- D. Disrupt** the current cumbersome claim-based transactional system used to pay healthcare providers by enabling a modern, streamlined, all-electronic method of healthcare commerce. A 2003 study found that administration accounts for 31 percent of United States healthcare expenditures.^{vi} Most industries would be considered inefficient at one-half of that overhead. An achievable shift in administration costs from 31 percent to 21 percent would result in an annual savings of greater than \$230 billion.

The current payment method is predicated on a reactive healthcare system that accumulates charges for the services rendered during a visit or encounter, and submits a “claim” for the resources of the payor. Payment cycles range from 10 days to 100 days, with the physician average between 35-45 days and hospitals between 50-70 days. The vast majority of these claims are from physicians’ offices, where these long revenue cycles create financial strains. The wide variance in the payment cycles is evidence that the current payment system is filled with friction, delay, complexity and waste.

In the short term, with a year 2011 target, physician services should be paid at the point of service, and the majority of hospital services should be paid at discharge. This is technically feasible without major modifications of **current** systems. In the intermediate term, with a 2013 target, the CMS-1500 and UB-04 transactions should be replaced by a new set of financial transactions that take full advantage of the availability of the Electronic Medical Record. These new transactions will embed not just the financial content for pricing purposes, but also the clinical content that documents the quality, medical necessity and appropriateness of the medical service provided.

Exhibit I



The previous steps A, B, C and D would eliminate much of the waste, error, variance, delay and friction from the current system, creating \$500 billion in recurring savings for the United States while concurrently improving quality and national health. These changes alone, however, will not adequately transform our current healthcare system. Two reform steps, E and F, must be achieved in the next decade to enable a sustained systemic change:

- E. Evolve** to a standards-based system of lifetime Personal Health Records (PHR) for every American. The PHR must be person-centric and person-controlled, ubiquitously accessible, unquestionably secure, highly interoperable with all entities in healthcare, extremely low cost, and capable of managing health objectives including wellness aspirations, chronic conditions, routine health and preventive initiatives, all facilitated through interactions with the individual's "medical home." The medical home is an approach to care delivery that collaborates with the individual to manage his or her health objectives and coordinate care across the various entities inside the traditional health system.

The lifetime personal health record, the single, up-to-date source of truth about each individual's health status and health objectives, should exist in "the cloud" (the Internet) and thus be available anywhere and anytime that it's needed. Enabled by interoperability and owned by the individual, the PHR will bring together in real-time each person's clinical, biometric and genetic information. The PHR will not only be fed by electronic medical records, including prescriptions and test results, but also will be updated in the home by a new generation of connected and aware healthcare devices such as scales, blood glucose meters, exercise equipment and blood pressure monitors. The PHR should become the source of information between the various providers and entities in the healthcare system. Today's HITSP^{vii} standards and information exchange policy imply that information is transmitted provider-to-provider through exchanges. In the future, the exchange should always be between the provider and the person's up-to-date PHR.

Contextual sharing of information must be enabled through wise and systematic evolution of information standards for safe, secure and effective exchange of medical information. Accurate person identification is central to the safety and utility of any national system architecture. We must replace the hazardous patchwork of methods used to identify patients in the current systems. A secure and trusted national healthcare ID system, a unique patient identifier, is needed to obtain the benefit of all of the healthcare information technology investments. A recently published study indicates that the current algorithmic matching approaches will create additional error in identification of critical clinical information.^{viii} These matching errors will propagate as the database grows larger, and without a safe, secure and reliable ID system, clumsily matched IT records will become a new source of medical error. With an ID in place, the IT community will solve the rest of the information exchange issues.

Next, the HITSP standards must continue to be strengthened around specific, tangible end-to-end objectives, such as *replacing the clipboard*, that fixture in every physician waiting room that endlessly and inefficiently captures and recaptures specific and predictable elements of demographic, payment and medical history. Disease- and condition-specific information exchanges must be developed to facilitate care across organizational boundaries and eliminate

duplication of efforts. Programs such as the Physician Quality Reporting Initiative (PQRI)^{ix} must be implemented through CCHIT-certified^x standards.

Facilitated, programmable networks will evolve to enhance the current provider-centric, reactive healthcare system. In today's reactive model, the person/patient must initiate a visit based on self-awareness of a medical problem, with little ability to predict and prevent disease. The resulting clinical visit is converted to a claim using CPT and ICD-9 codes and is subject to the aforementioned delay in payment.

In the future, much like the automotive diagnostic systems in a modern automobile detect the need for routine maintenance such as an oil change or tire pressure adjustment, the network will *facilitate*, or trigger, a proactive healthcare event because of a subtle state change of an individual's health. It will alert and provide the relevant context and clinical knowledge to the individual and appropriate caregiver. The network, with its predictive, learning and adaptive systems, becomes the "virtual medical home." The network collaborates with the individual to manage his or her health conditions and objectives by coordinating care across the various entities inside the traditional health system.

F. Financial innovation must accompany the investment in IT to complete the transformation.

Due to the complexities of medicine and societal expectations of our healthcare system, payment strategies should foster the creation of several new business models. The current resource-based payment system, for the physician office/clinic and hospital, is triggered only when a provider uses their resources in the care of medical conditions, or *sick care*. The underlying incoherent incentive, then, is to utilize more resources, regardless of medical appropriateness.

Future payment methodologies must include "fee for health," "fee for outcome," "fee for process," "fee for membership" as well as "fee for service." Some of these payment methods are being piloted by CMS, states and current insurance companies. In most cases, these pilots are not systemic changes, rather the dripping out of one more small alteration to see its effect. This creates confusion and adds complexity to those managing our largest healthcare organizations, while bewildering the smallest organizations. Emerging innovations need to be fostered by broad payment reform, specifically designed to create a highly efficient, frictionless future state where the incentives of physicians, hospitals and the array of other community-based services are aligned with the interests of the person, family and financing party. In this future state, quality and medical necessity will be totally transparent, creating significant incentives for innovations in the marketplace, leading to new technology-enabled delivery models. Among these are "medical homes" and "virtual medical homes" designed specifically to efficiently manage the chronic conditions that are congesting the current healthcare system. Medical homes will be paid to deliver a health outcome regardless of inputs consumed, competing on quality, cost and service.

Close

In the recently published healthcare book *Innovator's Prescription*, authors Christensen, Grossman and Hwang state, "Those fighting for reform have few weapons for systemic change ... there are very few system architects among these forces that have the scope and power of a commanding general to

reconfigure the elements of the system.”^{xi} A wise investment of federal incentives in healthcare information technology, supported by changes in policy, reimbursement methodologies and practice, can yield a recurring \$500B savings to the national spend on healthcare as well as lasting “systemic change.” This would relieve pressure on the overall United States economy while also making healthcare provision more streamlined, coordinated, accurate, predictive, proactive and affordable for healthcare providers and the people they serve. Rather than the baby boomers “busting” the system, they could leave behind a modern, frictionless healthcare system for generations to come.

To view this document online and engage in a dialog with Neal Patterson, please visit www.Cerner.com/ABCs.

ⁱ Hillestad R, Bigelow J, Bower A, Giroso F, Meili R, Scoville R, and Taylor R, “Can Electronic Medical Record Systems Transform Healthcare? An Assessment of Potential Health Benefits, Savings, and Costs,” *Health Affairs*, Vol. 24, No. 5, September 14, 2005.

ⁱⁱ McGlynn E, Asch S, Adams J, Keesey J, Hicks J, DeCristofaro A, and Kerr E, “The Quality of Health Care Delivered to Adults in the United States,” *The New England Journal of Medicine*, Vol. 348, No. 26, June 26, 2003.

ⁱⁱⁱ Fisher, ES et al, [Ann Intern Med](http://AnnInternMed). 2003 Feb 18;138(4):273-87.

^{iv} Amarasingham R, Plantinga L, Diener-West M, Gaskin D, and Powe N, “Clinical Information Technologies and Inpatient Outcomes: A Multiple Hospital Study,” *Archives of Internal Medicine*, Vol. 169, No. 2, January 26, 2009.

^v Institute of Medicine, Committee on Quality of Health Care in America. *To Err is Human: Building a Safer Health System*. Kohn LT, Corrigan JM, Donaldson MS, eds. Washington, D.C: National Academy Press, 1999.

^{vi} Woolhandler S, Campbell T, and Himmelstein D, “Costs of Health Care Administration in the United States and Canada,” *The New England Journal of Medicine*, Vol. 349, No. 8, August 21, 2003.

^{vii} HITSP: Healthcare Information Technology Standards Panel, www.HITSP.org.

^{viii} Hillestad R, Bigelow JH, Chaudhry B, Dreyer P, Greenberg MD, Meili RC, Ridgely MS, Rothenberg J, Taylor R, *Identity Crisis: An Examination of the Costs and Benefits of a Unique Patient Identifier for the U.S. Health Care System*, Santa Monica, Calif.: RAND Corporation, MG-753-HLTH, 2008.

^{ix} PQRI: Physician Quality Reporting Initiative. For more information see www.cms.hhs.gov/pqri/.

^x CCHIT: Certification Commission for Healthcare Information Technology. For more information see www.cchit.org.

^{xi} Christensen C, Grossman J, and Hwang J, *The Innovator’s Prescription: A Disruptive Solutions for Health Care*, New York: McGraw Hill, 2009, page xvii.