PERSPECTIVE

Achieving U.S. Health Information Technology Adoption: The Need For A Third Hand

Government intervention, judiciously and gently applied, can give the extra assistance needed to boost HIT adoption nationwide.

by Blackford Middleton

ABSTRACT: The U.S. health care information technology (HIT) market is broken; broad-scale adoption of HIT is not occurring despite considerable evidence of its impact on the quality of care and patient safety. Although adoption of HIT will not cure all that ails health care, it is an important step toward transformation of the U.S. health care delivery system. In this commentary I describe several critical issues pertaining to the HIT market failure and several ways in which the federal government may act as a deft and gentle "Third Hand" to assist the Invisible Hand of Adam Smith.

IN HIS PAPER in this volume, J.D. Kleinke writes eloquently, passionately, and persuasively for aggressive government intervention to address the U.S. health information technology (HIT) market failure.[1] He and others suggest that this market failure is preventing U.S. health care from delivering high-quality care to all Americans at reasonable cost.[2] I agree with him that the time is right for government action, and I agree with the supposition that the failed application of health care information management technology is partly responsible for much of what ails health care. I would remind us all in passing, however, that the failed adoption of IT in health care is not the only problem that ails health care: Our focus on illness care instead of public health and wellness care, our lack of care for the uninsured, our pluralistic and fractured health care financing system, and our apparent inability to guarantee health insurance and access to care from birth to grave will not be fixed by adopting HIT. I suggest that failure to consider several critical issues, even excluding the hard problems just mentioned, while promoting the adoption of HIT will fail to achieve the desired result: transformation of health care delivery with IT.

In this brief commentary I supplement Kleinke's analysis with another key reason for HIT market failure; identify several related issues that if not considered will stymie the adoption of HIT; and raise several questions that appear to be critical to address as this country considers federal intervention and broad support for national adoption of HIT.

In sum, I agree with Kleinke. The HIT market is broken. Adam Smith's "Invisible Hand" is shackled and in need of an assist to correct and stimulate the HIT market. There is an opportunity for federal intervention, as a "Third Hand," to assist with a broken HIT market, but I suggest that this Third Hand must be deft and gentle to effect the desired change and

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stimulate broad HIT adoption in the United States.[3]

Market Failure

Kleinke correctly identifies several of the key issues explaining an HIT market failure: a fragmented industry, difficult-to-demonstrate HIT return on investment, and first-mover disadvantage, among others. He also suggests that slow development of requisite HIT standards is a principal culprit. However, I suggest that he got this one backward. The latter is not a cause of the HIT market failure, it is a result. IT standards readily develop when a clear business case exists, along with customers willing to buy technology products and services. Witness the extraordinary adoption and accelerated development of standards for radio, television, personal computers, financial services, the Internet, the World Wide Web, and any other industry where the vast market potential was recognized and efficient market mechanisms existed to recognize risk with reward.

"Until a market mechanism is created to allow all parties to equitably share in the benefits of HIT adoption, broad-scale adoption will not occur."

■ **Asymmetrical risk and reward.** A central reason for the HIT market failure that Kleinke does not mention is the asymmetrical risk and reward among those who are footing the bill for HIT and those who reap the lion's share of the benefit. In analysis performed at the Center for Information Technology Leadership (CITL), looking at a model of cost-benefit for ambulatory computerized provider order entry (CPOE, a central component of electronic health record, or EHR, systems) in physicians' offices, we found that while provider groups are footing the bill for HIT, they may experience only 11 percent of the net potential gain.[4] Other stakeholders, payers principally among them, may reap 89 percent of the gain. Until a market mechanism exists to share any and all realized gains from the adoption of HIT among all stakeholders equitably, it is no surprise that provider groups are reluctant to pay for and adopt HIT.

■ **Insurers' role.** Kleinke provides excellent insight into a related central theme: the fundamental role of health insurers. Insurers, acting on behalf of their employer-purchasers, providers, and health plan members as customers, face an unresolvable conflict: Whose value function do they maximize? As any information technology (IT) pundit will say, "Applying IT to an imperfect process only makes it better" (at being imperfect!). Until a market mechanism is created to allow all parties to equitably share in the benefits of HIT adoption, broad-scale adoption will not occur. When the interests are aligned, at least for insurer and provider, the benefits of HIT appear to be clear; in organizations where such alignment exists, they are rapidly adopting and benefiting from HIT (witness Kaiser, the Veterans Health Administration, and some single-payer national health systems). Alignment of the patient's interest in this regard through increased personal accountability, access to transparent measures of health care quality, and exposure to health care's true costs is undoubtedly also relevant but beyond the scope of this discussion. For the average payer-provider dyad, the myopic focus of the payer, as Kleinke points out, forestalls investment in HIT. And with respect to the provider, until there is clear reward for HIT adoption, progress will be slow.

Three Other Issues

Thus, it is not only technology and economic issues that pertain to the market failure of HIT. Clearly, several directly related issues must be simultaneously addressed for the adoption of HIT to succeed. HIT pundits quip that "IT adoption is 5 percent technology-related issues, and 95 percent sociocultural issues," such as change management, political process, leadership, commitment, risk tolerance, finances, and so on. I suggest that from a systems perspective, and considering the U.S. health care delivery system as the target of op-

timization, three related and central issues must be considered to guide the Third Hand of the U.S. federal government and successfully stimulate HIT adoption.

■ **Health care business model.** The national pressure to adopt HIT exposes clearly some of the serious shortcomings of the current U.S. health care business model. I suggest that some of the problems we face at the macro level of health care financing in the United States must be addressed concurrently with adoption of HIT, to avoid automation of an imperfect system. It is critical to align risk and reward for HIT investment, critical to make straightforward and efficient administrative information exchange (and the Health Insurance Portability and Accountability Act, or HIPAA, has helped a lot in this regard), and critical to provide an incentive mechanism and reward for providers who are largely footing the bill for HIT adoption to date. Specifically, there is no direct reward to providers who actually take the trouble to do clinical information exchange, whether done by paper or electronically. It is part of good medical practice to assemble as complete a picture as possible of a patient's medical and surgical history, but regrettably there is no financial reason to do so now, and in an era of increasing financial pressures on providers and health systems, this is simply not the standard of care. It is clear that the value that may be derived from such health care information exchange (or "interoperability") is at least as great as the impact of HIT on improved quality and patient safety through clinical decision support tools.[5] It is also clear that the "integrated systems," which contain within one organizational umbrella both provider networks and facilities and which bear risk for health care through provision of health plans, are rapidly moving toward broad HIT adoption. The following question thus must be on the table: Does the drive to adopt HIT portend the need for redesign of the health care business model in a uniquely American manner to successfully adopt HIT?

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■ **RHIO organization issues.** This question is now being addressed in the numerous efforts under way across the country to understand and define reasonable business models for improved health care information exchange in regional health information organizations (RHIOs). In a few instances, clinical information exchange is occurring, but it arose largely from the expenditure of "political capital" among friends and colleagues in health care delivery systems and payer organizations, or in academic and research settings, absent an effective business model.

In the current RHIO development settings, one can imagine the conversations occurring about how to form the regionwide initiative: What defines the region, who needs to be at the table, who is going to pay for all of this, and who is going to take the first step? It is not clear if these efforts should be for-profit or not-for-profit. It is not clear what defines a "medical marketplace" or what the geographical boundaries are for a RHIO. In the absence of clear geographical boundaries, and often in the presence of political obstacles, it is not clear what public or private mechanisms may be used to help organize RHIOs: state or county departments of health, state medical societies, integrated health care delivery networks (the Stark laws notwithstanding), or more novel approaches yet to be defined. It is most likely, of course, that organizational structure will align with the most efficient mechanisms to respond to reimbursement incentives for HIT adoption. Given ambiguity on what form those mechanisms might take, public or private, makes getting organized difficult, to say the least.

■ **Appropriate federal actions.** When implementing HIT systems within a physician's office, provider organization, hospital

system, or an integrated delivery network, one of the first questions always asked is, "Who is the business owner?" or "What is the business case?" I suggest that given the failure of the U.S. HIT market, the major problems with "first-mover disadvantage," and the considerable public good that will result in the aggregate from the individual adoption of HIT by payers, providers, hospitals, and health systems, it is natural and appropriate to consider the U.S. federal government as the business owner from a macro perspective on behalf of the American public. The business case of a significant public good makes it appropriate for federal intervention with the Third Hand.

As described above, a Third Hand is needed to address the failure of the Invisible Hand in the HIT market. Secretary of Health and Human Services (HHS) Michael Leavitt in recent public remarks has described some of his thinking in these areas, and he is to be applauded for his clear thinking and leadership. The federal government can lead through early adoption of standard-compliant HIT. It can provide incentives for adoption of HIT through the public-sector health care delivery system. It can stimulate and guide the development of effective RHIOs, a national health information network (NHIN) architecture and principles for use, and HIT certification processes. It can provide federal guidance on issues of privacy, security, and the confidentiality of health care information, and civil and criminal penalties for its misuse. These are all the right things to do, and they appear to be the actions of a deft and gentle Third Hand working on a broken HIT market to help one critical aspect of what ails health care.

The only other suggestion would be for the federal government, with the power of its purse, to come forward with economic incentive programs to support HIT adoption. Whether created through regulatory moves in the Centers for Medicare and Medicaid Services (CMS) or from legislative initiatives, it is clear to me that a catalyst is needed to help providers and small to midsize hospitals and health care delivery systems, and small office-based providers especially, gain access to capital to address HIT implementation and start-up costs.

Fundamentally, we need to achieve a frame shift—from an unwired to a wired health care delivery system—and in the presence of a broken market there is no way for this to be handled efficiently as a "cost of doing business." In addition, to sustain the use of HIT once its adoption is under way, programs to recognize its use with differential payments (transferring downstream benefits experienced by payers and other stakeholders upstream to providers), or quality performance incentives, are required to achieve not just current quality of care but higher quality of care—yet another frame shift—with attendant downstream benefits and a significant public good. The federal Third Hand, deftly and gently applied, can effectively promote HIT adoption and help transform U.S. health care.

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NOTES

1. J.D. Kleinke, "Dot-Gov: Market Failure and the Creation of a National Health Information Technology System," *Health Affairs* 24, no. 5 (2005): 1246–1262.
2. B. Middleton et al., "Accelerating U.S. EHR Adoption: How to Get There from Here," *Journal of the American Medical Informatics Association* 12, no. 1 (2004): 13–19.
3. Bicyling enthusiasts will be familiar with the concept of a "third hand." It is a tool that a rider may use to help change a flat tire. It provides an assist when changing a tire when two hands simply are not enough.
4. D. Johnston et al., "The Value of Computerized Provider Order Entry in Ambulatory Settings," 2003, www.citl.org/research/ACPOE_Executive_Review.pdf (2 August 2005).
5. J. Walker et al., "The Value of Health Care Information Exchange and Interoperability," *Health Affairs*, 19 January 2005, content.healthaffairs.org/cgi/content/abstract/hlthaff.w5.10 (27 June 2005).

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