HEALTH INFORMATION TECHNOLOGY:
WHAT IS THE FEDERAL GOVERNMENT’S ROLE?

David Blumenthal
Institute for Health Policy
Massachusetts General Hospital/Partners HealthCare System

March 2006

ABSTRACT: Both the executive and legislative branches of the federal government have launched or are considering new initiatives to encourage the spread of health information technology (HIT). While use of HIT will not solve every health care problem, its potential benefits are substantial, justifying federal action to realize them. In particular, federal policy may be necessary to overcome market failure in the HIT sector and to foster the creation of an information network that spans state and even national boundaries. A variety of options exists for federal action, ranging from changes in existing regulations to the provision of funds to encouraging use of HIT by small health care providers.
CONTENTS

About the Author ........................................................................................................... iv
Introduction ..................................................................................................................... 1
Is HIT the Solution? ...................................................................................................... 1
Is There a Rationale for Federal Action? ................................................................. 4
What Options Are Available to the Federal Government? ..................................... 7
Current Federal Legislation ....................................................................................... 8
Conclusion ................................................................................................................... 10
Notes............................................................................................................................. 11

LIST OF FIGURES

Figure 1 Preventing Medication Mistakes ............................................................... 2
Figure 2 Electronic Access to Test Results, Electronic Health Records, and Electronic Ordering, by Practice Size ................................................. 4
ABOUT THE AUTHOR

David Blumenthal, M.D., M.P.P., is director of the Institute for Health Policy at Massachusetts General Hospital/Partners HealthCare System in Boston. He also holds the Samuel O. Thier Professorship in Medicine at Harvard Medical School. He was previously executive director of The Commonwealth Fund Task Force on Academic Health Centers and chairman of the Board of the Massachusetts Peer Review Organization. His research interests include quality management in health care, the determinants of physician behavior, access to health services, and the extent and consequences of academic–industrial relationships in the health sciences.

Editorial support was provided by Martha Hostetter and Deborah Lorber.
Health Information Technology: What Is the Federal Government’s Role?

Introduction
Health information technology (HIT) may be the hottest issue on the federal health care agenda. Seventeen bills dealing with HIT or the wider arena of patient safety, quality improvement, and pay for performance—areas of health care that may benefit from the application of technology—have been brought before the 109th Congress, where they have drawn broad, bipartisan sponsorship. President Bush and Secretary of Health and Human Services (HHS) Leavitt also have been strong advocates of increasing the availability of HIT.

There are at least two possible explanations for this broad-based support. Promoting HIT may be a worthy idea that requires the involvement of the federal government to realize its potential. Or HIT may represent the latest policy idea to capture the imagination of lawmakers desperate to find a way out of seemingly intractable health care dilemmas.

This report explores which explanation is correct and lays out HIT policy options that federal lawmakers could pursue.

Is HIT the Solution?
Before determining whether HIT represents a solution to the nation’s health care problems, it is important to note that there are fundamental problems with the health care system. National health expenditures of $2 trillion and an uninsured population of 46 million Americans led the Institute of Medicine to conclude in a recent report that “the American health care system is in need of fundamental change...health care today harms too frequently and fails to deliver its potential benefits.”¹ The scale of the challenge is perhaps best illustrated by the following: if the U.S. health care system were an independent country, its nearly $2 trillion in expenditures would give it the fourth-largest gross domestic product in the world, after the United States, Japan, and Germany. Given the sheer size of the health care enterprise, reform may prove difficult and complicated.

The enthusiasm for HIT reflects a widespread perception that wiring the U.S. health care system would enable major progress toward remedying at least two problems: escalating costs and suboptimal quality. Experience with past health care reforms suggests that such expectations should be greeted with some skepticism. Nevertheless, the best
available information shows that the dissemination of HIT may be part of the solution, and is likely to do more good than harm.

A number of academic studies indicate that various types of HIT, such as computerized order entry and prescribing, may reduce medication errors and improve quality of care while reducing costs or leaving them unchanged (Figure 1). These studies are mostly small—confined to selected hospital units or ambulatory practices—and do not address the question of what happens when HIT is rolled out through an entire system. Alternatively, the Veterans Health Administration offers an example of change within a large health care system. By all accounts, the Veterans Health Administration—with its 5 million patients and $30 billion budget—has undergone a remarkable turnaround in the quality of its health care over the last decade. HIT, including electronic health records (EHRs), is credited with a major role in this transformation.2

![Figure 1. Preventing Medication Mistakes](source)

Over 80 percent of medication mistakes (other than missed doses) were prevented by a computerized physician order entry system once it was fully developed at a teaching hospital. Medication mistakes that caused patient injury or had the potential to cause injury (and were not intercepted before reaching the patient) were reduced by 86 percent.

Attempts to model the national impact of HIT, though based on unverified assumptions about the current prevalence and likely future cost of electronic systems, also provide reassuring information. The RAND Corporation, in a study paid for by the HIT industry, recently estimated that nationwide rollout of a networked electronic medical record could save more than $500 billion over 15 years, exclusive of health benefits from disease prevention and disease management.3
The fate of Hurricane Katrina victims adds more credence to the case for HIT. Many individuals were unable to access their paper records, or found they were destroyed, leaving them and their physicians without information regarding their health or medication history. Presumably, if Gulf Coast citizens had medical records stored on a secure, interoperable electronic system, then their health care data would have been accessible at the click of a mouse. Interestingly, a federally led effort to locate and link existing medication data residing in insurance company and governmental databases was able to identify in one week the medications used by many Katrina evacuees. This suggests both the potential value of HIT and the feasibility of realizing it, if the will and leadership are present.

The promise of HIT is substantial. It can help physicians make informed decisions by giving them prompt access to information about patients and the latest advances in medical knowledge. It can help them with tough cases by making guidelines and expert opinions available. HIT also can help coordinate care between dispersed doctors and hospitals, thus avoiding duplicate testing and unnecessary services. However, even advocates of HIT realize that the effort will require more than simply providing computers to health professionals. Many of the processes through which health care is delivered are fundamentally flawed—wasteful, inefficient, and disorganized. If HIT simply automates flawed processes, it will not bring about the anticipated breakthroughs in quality and cost reduction. Thus, the introduction of HIT creates the opportunity for health care improvement, but does not guarantee it.

One thing is quite clear. The United States is a long way from realizing the full benefits of HIT. Estimates of the proportion of physicians using electronic health records range from a low of 6 percent to a high of 30 percent, with most figures in the high teens or low 20s (Figure 2). It is estimated that 20 to 25 percent of hospitals use electronic records of some kind and about 15 percent use computerized order entry. In nursing homes and home health care, HIT is virtually nonexistent.
IS THERE A RATIONALE FOR FEDERAL ACTION?

Even if the premise that HIT is currently underutilized in the United States is correct, it does not necessarily mean that the federal government has a role in increasing its use. To create a rationale for federal action, three conditions must exist:

1. The initiative will have compelling benefits for the public.
2. Freely functioning private markets will not realize those benefits; in other words, market failure exists.
3. Federal action is necessary to correct market failure.

The potential benefits of HIT are addressed above. Next, this report will examine the other two propositions.

Market Failure in the HIT Sector

As one health care commentator recently observed, “If the health care IT market worked, it would have worked by now.”7 There are a number of reasons why freely functioning markets do not currently work efficiently and effectively to realize the societal benefits of HIT.

The first reason is that economic incentives in the health care industry generally do not reward good performance, thereby reducing the motivation for health care providers...
to acquire HIT. Put another way, there is no obvious business case for HIT. Perversely, bad performance often enhances revenues in the health care sector. In the fee-for-service system, inefficient and suboptimal care often generates further visits, tests, and procedures and thus more revenue for providers. Additionally, the purchasers of HIT—mostly doctors and hospitals—would capture only a small fraction of HIT’s potential economic benefits. An estimated 90 percent would go to insurers and purchasers of care, including the federal government, in the form of lower premiums and enhanced worker productivity.8

A second reason for market failure in the HIT sector is that coordinated, collective action is required at almost every level of the health care system to realize the full benefits. This makes it unlikely that individual actors, pursuing their own self-interests, would be able to take full advantage of HIT. The importance of collective action is most apparent in securing effective communication—so-called interoperability—across providers of care in the United States. Consumers of health care move between providers within regional markets, between markets, and even across national boundaries. With an interoperable health care system, the medical records of Hurricane Katrina evacuees would have followed them from New Orleans to Dallas, Phoenix, Minneapolis, or even Mexico. Interoperability requires that computers can work together, which means their software and operating systems are compatible and they are able to exchange data. This requires that companies developing the software use compatible approaches and, equally important, that the doctors and hospitals who implement the software locally make sure that the changes they introduce do not undermine this ability to communicate. Interoperability has not developed spontaneously for many reasons, most importantly cost. In a competitive market, there are few incentives for software companies or providers to develop software that can communicate easily with competitors.

A third reason for market failure involves restrictions imposed by the federal government on HIT transactions. Federal anti-kickback regulations meant to curb fraud and abuse in the health care system prevent capital-rich hospitals from subsidizing the acquisition of HIT by capital-poor physicians because such payments may be interpreted as illegal inducements for physicians to refer to involved hospitals.

Is Federal Action Required to Remedy Market Failure?
Market failure often requires governmental action. But that does not mean the federal government must be involved. State and local governments can occasionally handle the job.
However, this is not likely to be the case with respect to HIT because the federal government is part of the problem. Medicare’s payment system, for instance, helps to undermine the market for HIT. Like most private insurers, Medicare pays for the great bulk of care on a fee-for-service basis, without regard to performance, thus contributing to the perverse incentives noted above. The legal restrictions on hospital–physician HIT transactions constitute another federal impediment to HIT diffusion.

Federal action also may be required to ensure that inequities in the dissemination of HIT do not arise. Safety-net institutions, which serve many Medicaid and uninsured patients, are at a disadvantage in acquiring HIT because they often lack the needed capital. Providing the resources to enable these investments may require changes in Medicaid policy or direct support for community health centers, public hospitals, and other safety-net providers. Medicaid law already offers more generous federal matching rates for states that invest in state-level Medicaid information management systems. It is unclear, however, whether such incentives would extend to states that support adoption of HIT by providers caring for Medicaid patients.

Federal action would likely be uniquely effective in the adoption and spread of HIT. The federal government, because of its huge role as a health care purchaser, has unparalleled leverage in the health care system. Action by Medicare has often produced dramatic results. When Medicare demanded electronic submission of billing information, it happened without delay. When the program provided financial rewards for the provision of hospital quality data, hospitals hastened to comply.

Even if federal action were not required to remedy market failures related to HIT, the federal government would still have an interest in promoting the spread of HIT as a way to improve the functioning of its current programs. Medicare and Medicaid would be among the beneficiaries of any potential savings, through reduced waste and improved health status among elderly, poor, and disabled patients.

Meeting the HIT challenge will require a national infrastructure to enable the movement of health care information freely and efficiently throughout the dispersed health care system. Similar challenges arose with respect to the movement of private commerce by road and private passengers by air across the United States. The first challenge led the Eisenhower administration to create the interstate highway system. The second led to the Federal Aviation Administration and a national system of air traffic control.
WHAT OPTIONS ARE AVAILABLE TO THE FEDERAL GOVERNMENT?
If federal policymakers conclude that conditions exist for federal action with respect to HIT, they should choose interventions that are effective and appropriate. To be effective, these actions should address the causes of market failure. To be appropriate, they should not require the federal government to do things that markets could do equally well or better. The options fall into two categories: those that enhance market functioning and those that do things the markets will not accomplish.

Improving Market Functioning in HIT
The federal government could improve the functioning of HIT markets by helping to create incentives for providers to improve their health care performance, for example, by facilitating or requiring the collection and release of performance data. Initiatives of this nature are already under way in the Medicare program. Another option is to financially reward good performance through pay-for-performance programs, with which Medicare is also experimenting. An advantage of paying for performance is that it may encourage improvements that do not require HIT, thus putting to the test the proposition that HIT is necessary to accomplish health system goals.

A second way for the federal government to improve market functioning is to pay for providers to acquire and use HIT. A variety of options are available in this regard. The government could provide grants or low-interest loans to providers, especially or perhaps exclusively to those without the capital to invest in HIT systems, including small providers, providers in rural areas, and safety-net institutions. Some observers have called for a modern version of the Hill-Burton program, which helped create the nation’s hospital system in the middle of the last century through a system of federal grants. Another approach is to pay for use of HIT by increasing Medicare or Medicaid payments for services to institutions that adopt HIT systems. Both of these approaches—grants to capital-poor institutions or providers and pay-for-use systems—could be conceptualized as forms of gain-sharing. As noted, the federal government stands to gain more financially from HIT adoption than do providers. Extra payments redistribute the gains to ensure that providers’ incentives are aligned with the needs of government programs.

Third, the federal government can eliminate dysfunctional restrictions on market transactions by creating a safe harbor within anti-kickback regulations for hospitals that assist physicians in acquiring and maintaining HIT.

Fourth, the federal government could use its muscle as a purchaser to require HIT use as a condition of participation in crucial federal programs. The military has become a
major purchaser of private health care services through its Tricare for Life program, and Medicare is the single largest payer of care in the United States. These programs could refuse to do business with providers that do not use up-to-date HIT. Some may view this as an unfunded federal mandate. Others, however, might see it as the federal government doing what any savvy private actor would do: using market power to get better value for the money.

Catalyzing Collective Action for Information Exchange
The federal government can try to persuade private developers of HIT to develop and sell products that work together and enable efficient exchange of information within and across health care markets, states, and national boundaries. As a purchaser, the government can require the use of common definitions and protocols by providers and the HIT industry as a condition of doing business with the federal government. Another approach is to subsidize the creation of local health care organizations—so-called regional health information organizations (RHIOs)—that facilitate the sharing of information among local providers of care. These RHIOs would, in effect, help build the local health information highway systems to which the interstate would connect.

CURRENT FEDERAL LEGISLATION
Recent Senate action highlighted the bipartisan appeal of HIT and provided some indication of which policy directions might capture congressional support. On November 18, 2005, the Senate unanimously passed the Wired for Health Care Quality Act of 2005 (S. 1418). This bill contains a wide variety of initiatives drawn from the menu discussed above. It would instruct the HHS secretary to lead an effort to standardize the language and terminology used by HIT software. The Act also would provide grants for the acquisition of HIT to rural and small health care providers, federal loans to states to support state loans for regional organizations encouraging interoperability, and grants to medical schools and academic medical centers to encourage training of health professionals in the use of HIT.

No companion bill for S. 1418 exists in the House of Representatives at this time, although a variety of HIT-related proposals have been introduced. Representative Johnson and 41 cosponsors introduced H.R. 4157, which would provide a safe harbor for HIT transactions between hospitals and doctors under the anti-kickback provisions of the Medicare law. H.R. 4157 also would instruct the HHS secretary to develop standards to ensure privacy and confidentiality of electronic health records. Representatives Murphy and Kennedy have introduced H.R. 2234, the 21st Century Health Information Act, which would instruct the HHS secretary to facilitate the development of standards for
HIT, create safe harbors for HIT transactions between doctors and hospitals, provide grants and loans for HIT projects by small providers, and encourage Medicare and Medicaid to reward providers that use HIT with extra payments. Representatives McHugh and Gonzalez have introduced the National Health Incentives Act of 2005 (H.R. 747), which would authorize the HHS secretary to make grants to small health care providers to cover expenditures relating to the implementation, design, testing, acquisition, and adoption of electronic health records and other HIT. It also would amend the Internal Revenue code to allow for refundable tax credits for a portion of the expenses used to establish HIT systems.

Three other bills focused solely on HIT have been introduced in the Senate. The Information Technology for Health Care Quality Act (S. 1223), proposed by Senator Dodd, would provide for the adoption and dissemination of government standards that promote the efficient exchange of data between health information technology systems. Senators Stabenow and Snowe proposed S. 1227, the Health Information Technology Act of 2005. This bill would provide further incentives for adoption of HIT through grants to offset adoption and implementation costs, evaluation and assessment of informatics systems, adjustments to Medicare payments for providers who use HIT, and the adoption of national data and communication HIT standards. Senator Coleman introduced S. 1952, the Critical Access to Health Information Technology Act of 2003, which would focus on improving HIT systems in rural areas through award grants to states.

Additional bills address HIT issues through programs aimed at the broad areas of quality improvement, patient safety, and pay for performance. For instance, the Patient Safety and Quality Improvement Act of 2005, which was signed into law as P.L. 109-41 in July, amended Title IX of the Public Health Service Act to improve patient safety and reduce adverse events that put patients at risk. In doing so, the bill promotes studies to assess the impact of technology on improving health care. Another bill, the Affordable Health Care Act (S.16), calls for an increased role for HIT in improving the quality and efficiency of health care delivery. Four other bills (H.R. 2356, H.R. 3617, S. 1081, S. 1356) address updates in Medicare payment formulas and encourage value-based purchasing in Medicare. The Medicaid Transaction Grant Act of 2005 (H.R. 4142) would provide HIT grants to state Medicaid programs to support efforts to reduce medical errors and inappropriate care. The Healthy America Act of 2005 (S. 1503, which is included in S.4) would require the HHS secretary to maintain a patient safety network of databases to accept, aggregate, and analyze patient safety data. Lastly, S. 1784, proposed by Senators Clinton and Obama, would create an Office of Patient Safety and Health Quality, a
national patient safety database, and a national medical error disclosure and compensation program.

**CONCLUSION**

While skepticism is always warranted in appraising new ideas in health care, the case for HIT is persuasive. The conditions for federal involvement in promoting the use of HIT seem to exist, and options for action range from getting the federal government out of the way (i.e., changing anti-kickback regulations) to forceful promotion of HIT dissemination and use (i.e., using HIT as a condition of participation in Medicare, establishing grants and loans for HIT acquisition).

Why has the federal government not moved even more aggressively to promote HIT? Various reasons exist and include the reluctance to extend the reach of government, belief that private markets ultimately will overcome the problems that have inhibited adoption and use of HIT, and concern that promulgation of federal standards for HIT interoperability will interfere with innovation. Avoiding this last side effect would certainly require care on the part of federal policymakers.

Beyond these broad objections, another major concern is cost. Wiring the health care system could cost as much as $156 billion over five years, or roughly $31 billion annually. Though this would constitute only 2 percent of national health care spending, it remains a daunting figure. However, it is also somewhat misleading, since it includes required private, as well as public, spending. With a much smaller investment of hundreds of millions—targeted at helping small, capital-poor providers and building RHIOs—the federal government could make a substantial impact on the spread of HIT. Also, many potential federal actions, such as catalyzing standards or liberalizing restrictions on physician–hospital collaborations, would require no additional federal spending.

As recent federal legislative activity makes clear, the momentum behind federal action on HIT may have reached a tipping point. Like every policy initiative, this one has risks—especially, that HIT will not fulfill the increasing and perhaps exaggerated expectations that surround it. However, for a Congress that recently grappled with the Medicare Modernization Act, the risks associated with promoting HIT might seem modest and affordable.
NOTES


RELATED PUBLICATIONS

Publications listed below can be found on The Commonwealth Fund’s Web site at www.cmwf.org.


Quality Development in Health Care in The Netherlands (March 2006). Richard Grol, Centre for Quality of Care Research, Radboud University Nijmegen Medical Centre. Prepared for the Commonwealth Fund/Alliance for Health Reform 2006 Bipartisan Congressional Health Policy Conference, this report discusses several health sector reform initiatives in the Netherlands, including the central focus on primary care.

Medicare’s New Adventure: The Part D Drug Benefit (March 2006). Jack Hoadley, Health Policy Institute, Georgetown University. Prepared for the Commonwealth Fund/Alliance for Health Reform 2006 Bipartisan Congressional Health Policy Conference, this report considers the types of plans that initially entered the Medicare Part D market; the shape the market and the benefit are taking; the drugs initially available through the plans offering the benefit; the success in enrolling beneficiaries; whether beneficiaries will have improved access to needed drugs; and the impact on the larger marketplace for prescription drugs.

Measuring, Reporting, and Rewarding Performance in Health Care (March 2006). Richard Sorian, National Committee for Quality Assurance. Prepared for the Commonwealth Fund/Alliance for Health Reform 2006 Bipartisan Congressional Health Policy Conference, this report notes that quality measurement and reporting in health care are crucial for identifying areas in need of improvement, monitoring progress, and providing consumers and purchasers with comparative information about health system performance.

Can Medicaid Do More with Less? (March 2006). Alan Weil, National Academy for State Health Policy. Prepared for the Commonwealth Fund/Alliance for Health Reform 2006 Bipartisan Congressional Health Policy Conference, this report notes that Medicaid enrollees—who have extremely limited incomes—cannot absorb increases in out-of-pocket health costs as readily as the working population.

Recent Growth in Health Expenditures (March 2006). Stephen Zuckerman and Joshua McFeeters, The Urban Institute. Prepared for the Commonwealth Fund/Alliance for Health Reform 2006 Bipartisan Congressional Health Policy Conference, this report reviews trends in health expenditures in the United States over the past decade, examines differences between public and private spending, and considers explanations for the growth in spending and strategies intended to contain it.