# Federal Investment In Health Information Technology: How To Motivate It?

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## ABSTRACT

Health care market failures include inefficient standard making, problems with coordination among local providers to optimize care, and inability to measure quality accurately, inexpensively, or reliably. Study of other industries suggests policy directions for health information technology and the magnitude of gains from improving market functioning, which are very large. A perspective drawn from U.S. industrial history - in particular railroads and the interstate highway system - suggests an investment level roughly consistent with recent estimates drawn from the medical literature. The benefits of quick action probably outweigh the benefits of delaying and choosing the perfect funding mechanism. [PUBLICATION ABSTRACT]

## FULL TEXT

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ABSTRACT: Health care market failures include inefficient standard making, problems with coordination among local providers to optimize care, and inability to measure quality accurately, inexpensively, or reliably. Study of other industries suggests policy directions for health information technology and the magnitude of gains from improving market functioning, which are very large. A perspective drawn from U.S. industrial history-in particular railroads and the interstate highway system-suggests an investment level roughly consistent with recent estimates drawn from the medical literature. The benefits of quick action probably outweigh the benefits of delaying and choosing the perfect funding mechanism.

THE PAPER BY J.D. Kleinke lays out some of the most important dysfunctional aspects of the health information technology (HIT) market.1 Kleinke suggests that HIT does not diffuse rapidly, but a distinction needs to be made among types of HIT. Networked, complex electronic health records (EHRs), which hold the promise of transforming health care, have been adopted relatively slowly, although adoption now (finally) stands at more than 32 percent in acute care settings.2 Stand-alone software that immediately improves the bottom line is rapidly adopted (for example, 89 percent of providers had adopted case-mix analysis software by 2002). However, this does not refute Kleinke's argument. The HIT innovations are usually made in service of the inefficient system (revenue enhancement) or will be used less effectively than they should be (EHRs). A highly effective configuration-interoperable EHRs-might not be adopted without proper government intervention, because some entities have no economic interest in having it happen. (I prefer this more value-neutral language to Kleinke's use of "secrets.")

Research on other industries that effectively employ IT provides clues on the necessary direction of change in health care. Case studies from the late 1990s establish that IT has helped telecommunications, securities trading, retail, and wholesaling transform their businesses with productivity improvements of 8-17 percent per year, for at

least four years and sometimes for more than a decade.

How does health care compare with these industries on IT success drivers? Rather poorly: Health care has a low rate of IT investment (perhaps a 5 percent increase per employee per year, compared with rates in the mid-teens for successful industries) and no champion firm such as Wal-Mart to provide overwhelming competitive pressure to upgrade efficiency. (Kaiser cannot be that champion today because, as with all health care providers, it cannot demonstrate higher value in the straightforward way that Wal-Mart can.) Furthermore, there is an integration-hindering fragmented system of providers, arguably lower opportunity for rapid change (unlike, say, telecoms with revolutionary fiberoptics or securities trading with the Internet), and more regulated labor markets.

Given this poor current state of affairs, it appears that HIT is adding perhaps only 1 percent productivity growth per year, in contrast to historical performance of perhaps 4 percent in top IT-using industries (telecoms and securities trading) and 1.5-2 percent in the strong industries (wholesale and retail). The goal of federal policy should be to double this 1 percent growth rate so that it matches that achieved by the retail and wholesale industries in the late 1990s. Further, taking the necessary steps to make this happen should unleash the competitive forces that allow total growth rate (HIT plus non-HIT) to also double or more.

Kleinke points out that there are problems with providers and payers. What should be done? A great deal can be done without subsidizing providers' technology purchases directly. In truth, the biggest problems are arguably in "market making," in which the largest customer (government) has done a weak job of setting market rules or rewarding market efficiency.

Government, especially Medicare, hasn't used its muscle to date to push IT standards or, most problematically, quality, which has allowed the inefficient market to continue, despite its huge consumption. Of course it is hard to do, but government needs to work harder at buying smarter, and consumers will gratefully follow. HIT is central to this policy agenda.

* Market making. Government can improve on several market-making functions immediately. First, Medicare should coordinate and enforce standards, as Kleinke suggests. I agree that a proactive Medicare program pushing standards must be part of the solution. Kleinke also points out some of the serious interoperable first-mover disadvantages; government can help overcome them through regional health information organization (RHIO) development and legal reform.

Kleinke touches on a third market failure that might be the most serious of them all: Consumers cannot yet measure quality quickly, comprehensively, and reliably enough in the marketplace to make quality assessments useful for consumption decisions, despite some fine recent academic work. Health care producers prefer not to make the investment in quality measurement because it is expensive and not appropriable, and they may end up penalized by customers if their own inefficiencies are exposed. In most markets, quality improvement occurs because providers are easily measured on it and thus have no choice when faced by demanding and mobile customers.

Government needs to ensure that quality is a major competitive weapon among providers. The inability to measure quality quickly and accurately is an enormous problem. Providing incentives for interoperable EHRs, by helping with standards, RHIOs, and possibly other incentives, creates a compelling double bonus: First, the literature shows that it will increase quality directly; second, it will reduce market failure by allowing quality to be measured more easily in the future, thereby allowing proper competitive forces to work more readily.

* How much to spend? In addition to the rigorous analyses of Jan Walker and colleagues and Richard Hillestad and colleagues, there is one more, apparently consistent, estimate of investment cost, that draws from U.S. industrial history rather than the medical literature.3 To motivate policy, Kleinke applies relevant public investment examples drawn from railroads, the water system, and space. The first two are transport systems. The analogy of the EHR as an information transportation system is obvious. I would add another particularly apt transportation analogy: the interstate highway system. Railroad (1881-1885) and interstate highway system (1955-1959) investments were roughly 1 percent of gross domestic product (GDP) for five years and were paid for by a much less wealthy nation. Duplicating the interstate highway investment would take 1 percent of today's roughly $11 trillion GDP, or $110 billion per year, for about five years. One can think of this as a top-down number that is quite consistent with the bottom-up numbers of Walker and colleagues and Hillestad and colleagues, which run from the tens to low hundreds of billions per year. Without overselling the idea, I think that an analogy like this might help motivate the country.

The gains from the new investment would be in obtaining arguably 6 percent (wholesale or retail) to 8 percent (telecom) productivity improvements, year in and year out, with perhaps a third to a half of it attributable to HIT. Such growth would imply HIT benefits of a cumulative $6-$11 trillion over fifteen years. With respect to total growth in the health care sector, eighteen years of 8 percent productivity growth quadruples the productivity of U.S. health care. Achievable or not, that might be the goal we should have our eye on, not marginal redistributive improvements.

Accomplishing this goal will be difficult politically. The case for public investment seems clear, as several papers in this volume attest.4 It seems likely that choosing the best funding mechanism is of much less financial value to U.S. citizens than getting started quickly. Of course, how it is funded is virtually all that matters politically. It took more than twenty years until, finally, President Eisenhower could forge the consensus for the interstate highway system. It is up to the politicians and the American public to push for faster consensus than that.

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**Sidebar**

"Government needs to ensure that quality is a major competitive weapon among providers."

**Footnote**

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. The statistics and the ideas in this comment are drawn from A.G. Bower, The Diffusion and Value of Healthcare Information Technology, Pub. no MG-272-HLTH (Santa Monica, Calif.: RAND, 2005).
3. 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); and R. Hillestad et al., "Can Electronic Medical Record Systems Transform Health Care? Potential Health Benefits, Savings, and Costs," Health Affairs 24, no. 5 (2005): 1103-1117.
4. See, among others, R. Taylor et al., "Promoting Health Information Technology: Is There a Case for More-Aggressive Government Action?" Health Affairs 24, no. 5 (2005): 1234-1245.

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