



A Historic Opportunity

Wedding Health Information Technology to Care Delivery
Innovation and Provider Payment Reform

Todd Park and Peter Basch May 2009



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“The goals [of national health IT investment] are quality and efficiency, instead of just putting machinery in offices. If we encourage better performance, then physicians are going to find ways to improve performance. And health information technology is one crucial way to do that.”

– *Dr. David Blumenthal, newly appointed National Coordinator for Health Information Technology at the Department of Health and Human Services, quoted in The New York Times, March 25, 2009*

“Realizing the full potential of health IT depends in no small measure on changing the health care system’s overall payment incentives so that providers benefit from improving the quality and efficiency of the services they provide. Only then will they be motivated to take full advantage of the power of electronic health records.”

– *Dr. David Blumenthal, “Stimulating the Adoption of Health Information Technology,” New England Journal of Medicine, April 9, 2009*

Introduction and summary

The \$19 billion health information technology investment authorized under the American Recovery and Reinvestment Act's HITECH program presents a landmark opportunity to catalyze improvement of our nation's health care system. This key piece of President Obama's policy agenda encourages doctors and hospitals to embrace health IT solutions in order to strengthen and modernize the infrastructure upon which our health care system runs.

This critical health IT investment program will fail, however, if it is treated as a pure technology implementation program. Indeed, failure is effectively guaranteed if the HITECH program embraces technology adoption for the sake of adoption. But if this new health IT investment program is wedded to a strong commitment to provider payment reform in forthcoming health care reform legislation and implemented specifically as an accelerator of health care delivery innovation and payment reform, then the investment program can help transform U.S. health care as we know it.

Here's why. Health IT is capable of powering significant improvements in:

- Preventive care
- Chronic disease management
- Care coordination
- Non-visit-based care, or "e-care"
- Knowledge-based medication management

Health IT-enabled care models in each of these arenas have very practical, doable, near-term applications, can generate significant benefits in terms of the quality and value of health care delivery, and are already being executed successfully today by some leading health care providers.

A major barrier to widespread implementation of these models, however, is our provider payment system. As has been well documented, the current U.S. health care payment system pays predominantly for the volume of services rendered, such as office visits and procedures, and not for the quality of health care outcomes. And it's a payment system that effectively punishes providers for achieving efficiencies such as the elimination of avoidable hospital readmissions and unnecessary in-person office visits. If the average medical practice today were to reduce its volume of *reimbursed* office visits in order to

spend more time on *unreimbursed* care coordination, chronic care management, non-visit-based care, and medication management in order to improve patient health, care quality, and care efficiency, then the sad truth is that the practice would not survive.

As a result of this absence of a sound business case for improving health care quality and value, most doctors and hospitals generally haven't pressured the companies that provide health IT solutions for products that support significant improvements in care quality and value. Today's electronic health records, or EHRs, are reasonably proficient at helping health care providers pick codes for billing purposes and document care for malpractice purposes. But current EHRs are much less well developed in their ability to facilitate higher-quality, higher-value health care through capabilities such as clinical decision support, patient "registries," and quality performance reporting. This bias is not driven by technical difficulties in designing and building such features. It's a result of the absence of a business case in the U.S. health care system for such improvements.

Commit to meaningful payment reform in health reform legislation

The fundamental solution to this dilemma is to change market incentives for health care providers (and, by extension, health IT vendors) to reward the delivery of higher-quality, more efficient health care. It is vitally important, therefore, that health care reform legislation now being formulated by Congress commit to provider payment reform that encourages:

- Proactive improvements in individual and population health status
- Collaboration among health care providers necessary to accomplish these improvements
- Achievement of efficiencies in care, such as the elimination of duplicate services, avoidable hospital readmissions, and unnecessary in-person visits

Payment reform can also radically improve the usability of EHRs. The reason: The current system of so called evaluation-and-management, or E&M, coding of office visits—which drives extraordinary complexity into clinical documentation and EHR workflow—could be replaced by payment-and-documentation standards that are simpler and more focused on what is actually valuable for patient care.

The HITECH health IT investment program should be designed specifically to help spur improvements in health care quality and efficiency and to accelerate the realization of a reformed payment system that rewards these improvements. The result will be a "virtuous cycle" in which the adoption and use of truly effective health IT enables care delivery improvements that are rewarded by value-based provider payment systems, which in turn provide strong, sustainable financial incentives for the adoption and use of the right health IT. This optimal HITECH implementation plan has three major components.

A results-oriented standard for the “meaningful use” of health IT

At its core, HITECH rewards not the purchase of health IT but the “meaningful use” of health IT. The vast majority of the \$19 billion in HITECH investments go to temporary bonuses paid by Medicare and Medicaid to health care providers who can demonstrate “meaningful use” of “certified EHRs.” These payments range from \$44,000 to \$64,000 per physician and up to \$11 million per hospital, paid out over five years. The initial standard for “meaningful use” should focus on uses of health IT that will actually help improve care and accelerate payment reform:

- Tracking key patient-level clinical information in order to give health care providers clear visibility into the health status of their patient populations
- Applying clinical decision support designed by health care providers to help improve adherence to evidence-based best practices
- Executing electronic health care transactions (prescriptions, receipt of drug formulary information, eligibility checking, lab results, basic patient summary data exchange) with key stakeholders
- Reporting a focused set of meaningful care outcomes and evidence-based process metrics (for example, the percentage of patients with hypertension whose blood pressure is under control), which will be required by virtually any conceivable new value-based payment regimes.

The standard for “meaningful use” should be made more stringent over time, as is anticipated in the HITECH Act. The natural extension of this approach to “meaningful use” would be to introduce actual performance against targeted outcomes and process metrics as a key part of the definition of “meaningful use” in years 3 to 5 of the HITECH incentive payments program.

Widespread achievement of “meaningful use” by health care providers

This process should be driven in significant part by a results-oriented implementation of HITECH’s Regional Health Information Technology Extension Centers program. Many providers, particularly small practices and “safety net” health care providers who serve the underserved, lack the expertise and resources to purchase, install and use information technology to innovate care. HITECH provides for the creation of Regional Health IT Extension Centers, or RHITECs, that could be structured to meet this need for up to 200,000 physicians, if empowered appropriately.

RHITECs should be created as results-oriented entities focused single-mindedly on the achievement of “meaningful use” by client providers. They should offer the full set of services required to help health care providers achieve “meaningful use,” including group purchasing of health IT solutions, implementation assistance, project management,

vendor relations, and quality improvement. RHITECs should tailor their work to fit the unique needs of each of their communities, and should be at substantive financial risk for achieving “meaningful use” targets in their populations of health care provider clients.

Tight coordination of the health IT program with provider payment reform

The advance of health IT and payment reform should be executed in close coordination, with each aiding the other. The quality metrics desired by Medicare to power payment reform should directly inform the definition of “meaningful use.” In turn, the data collected via the spread of “meaningfully used” health IT should help power the development and refinement of reformed payment models.

A strong public commitment to and progress toward payment reform should help cement the business case for health IT adoption and “meaningful use.” Congress can facilitate the coordination of Medicare payment reform and the HITECH program by formally recognizing the linkage between the two and asking for periodic reports on their integration and joint execution. The combination of the two programs is significantly more likely to help spur care delivery innovation and health improvement than either will separately.

The HITECH program offers our country a remarkable opportunity to utilize health IT to significantly accelerate the reform of our health care system. In the pages that follow, we will detail why health IT adoption, care delivery innovation, and payment reform must proceed hand in hand. We will discuss how health IT can concretely be harnessed to power significant improvements in preventive care, chronic disease management, care coordination, e-care, and knowledge-based medication management. And we will present the recommendations outlined in this introduction and summary in more depth.

We are confident that when you reach our concluding remarks you will agree that a golden opportunity now lies before Congress, the president and the American people to reform our health care system for the better and for the long term—through a “virtuous cycle” of health IT adoption, care delivery innovation, and payment reform.

Why health IT, care delivery innovation, and provider payment reform are inextricably intertwined

The purpose of health IT is not to advance technology for its own sake, but to advance the health of our nation and the value produced by our health care system. Health IT by itself doesn't do this. What health IT *can* do is optimize the presentation of information and the ability to act upon that information. In doing so, it can help those who provide medical care do that job much more effectively via more consistent preventive care, more effective chronic disease management, better coordination of care across providers, non-visit-based care, or “e-care,” and knowledge-based medication management.

Today, however, it is self-evident that health IT has not been adopted en masse and consistently utilized in the United States to accomplish these objectives. Only 13 percent of physicians presently utilize even a basic electronic health record, or EHR, and only 4 percent operate using a “fully functional” EHR.¹ And there is widespread skepticism about the utility of what has been implemented with respect to health IT to date.² Why is this the case?

Here's the problem. As has been well documented, the current U.S. health care provider payment system pays for volume of services rendered, such as office visits and procedures, and not for health and quality outcomes.³ Providers therefore do not benefit financially from investing and engaging in health IT-enabled preventive and chronic disease management, care coordination, e-care, and medication management—all activities that improve the quality and value of health care delivery but are generally not well-rewarded by payers.

Perversely, the more physicians choose to engage in these activities to deliver improved health care for their patients, the worse their practices do financially. It's no accident that the average medical practice focuses on of the volume of *reimbursed* office visits delivered. If that practice were instead to spend time on *unreimbursed* care coordination, chronic care management, non-visit-based care, and medication management in order to improve patient health, care quality, and care efficiency, then the practice would not survive.

This lack of a business case for improving the quality and value of health care leads to a relative lack of demand by health care providers for health IT features that would support care quality and value improvement, such as patient “registry” functionality to enable the tracking of patient status across key health and treatment metrics, robust clinical decision support, and quality performance reporting. As a result, today's EHRs are reasonably proficient at helping providers pick codes for billing purposes and document care for malpractice purposes, but are much less well developed in their ability to facilitate better care and health.

This is actually not driven by the technical difficulty of designing and building such features. For instance, the ability to add solid clinical decision support with patient registry and reporting functionality is relatively straightforward, and could be deployed in basic form by most health IT vendors in a short period of time. The issue, rather, is lack of provider demand for these capabilities, driven by the absence of a sustainable business case for improving health and care value.

A key reason why the underlying payment environment is so “toxic”⁴ to the delivery of quality health care is that payment systems that actually reward quality and value improvement are dependent in large part on the presence of robust health IT that can produce the quality data required by such regimes. In the absence of the widespread adoption of health IT even remotely capable of supplying such data, meaningful payment reform is sharply inhibited. As a result, our health care system is caught in a “vicious cycle” (see chart on page 7) in which:

- The lack of large-scale health IT adoption cripples the ability to institute value-based payment regimens
- The absence of value-based payment cripples the business case for care delivery innovation focused on improvement of health and care value
- The lack of a business case for care delivery innovation cripples demand among clinical providers for health IT to enable key care innovations
- The absence of demand among clinical providers for health IT inhibits large-scale health IT adoption
- The lack of large-scale health IT adoption cripples the ability to institute value-based payment

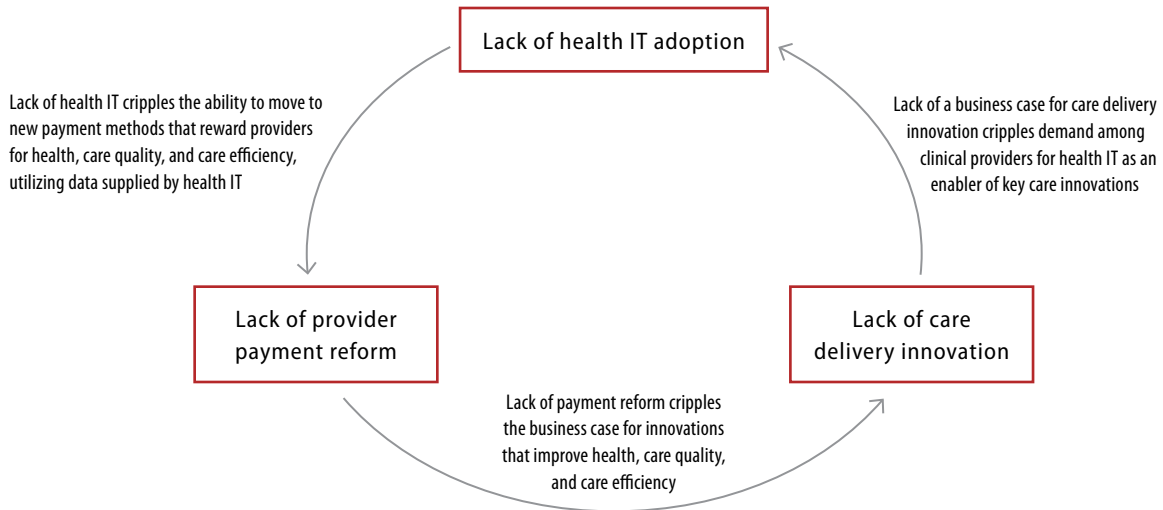
Understanding the frustrating dynamics of the current “vicious cycle,” however, points to the seed of a solution—the insight that we must aim to trigger a “virtuous cycle” that is the polar opposite of the “vicious cycle.” This can be done by conceiving of health IT adoption, care delivery innovation, and payment reform as interrelated and interdependent efforts that should be executed in combination with each other.

We can help transform health care in our country by adopting health IT systems that enable care delivery innovations that are rewarded by value-based provider payment regimes, which are in turn enabled by and provide strong financial incentives for the adoption and use of the right health IT. The \$19 billion health IT investment authorized under the HITECH program represents a key component of what will be required to unleash this “virtuous cycle” (see chart on page 7).

To successfully launch a spiral of health care improvement, however, HITECH must be implemented optimally and, critically, should be paired with meaningful provider payment reform via upcoming health reform legislation. Let us examine in more detail why and how.

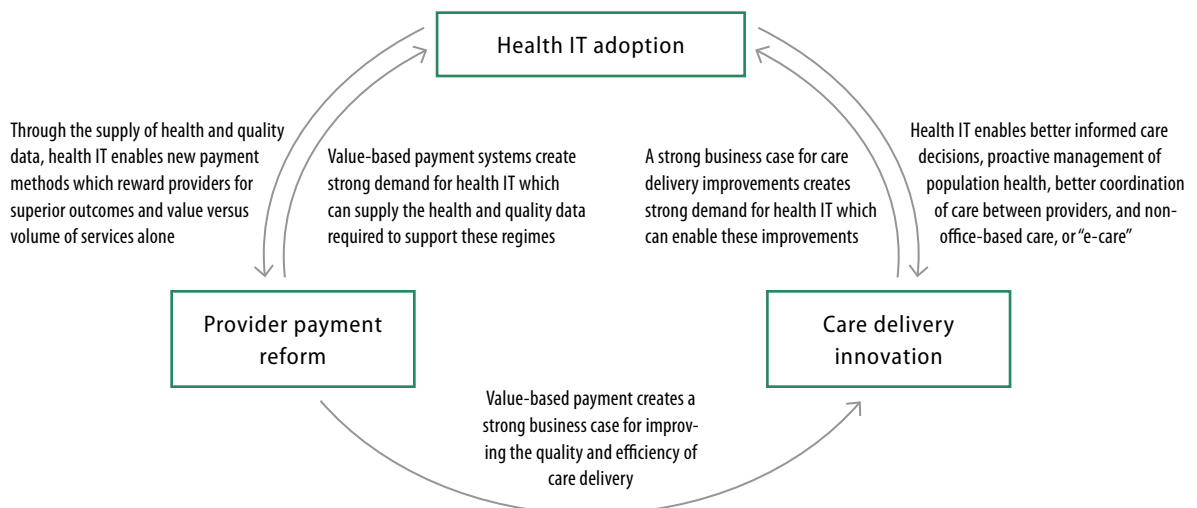
The Vicious Cycle

The interconnected failure of health IT adoption, provider payment reform, and care delivery improvement in our current health care system



The Virtuous Cycle

How health IT adoption, care delivery improvement, and provider payment reform can combine to transform our health care system for the better



How health IT can help make care better

As with the successful application of technology in other industries, the objective of health IT should not be to simply automate existing processes and tasks, which has unfortunately been the case with many health IT deployments, but rather to enable new capabilities that are either difficult or impossible without the right information technology. Health IT can enable substantial innovations in

- Preventive care
- Chronic disease management
- Care coordination
- Non-visit-based care, or e-care
- Knowledge-based medication management

Health IT-enabled care models in each of these arenas have very practical, doable, near-term applications and are indeed being executed today by some leading providers who have either managed to create the right economic incentives for themselves or are bravely attempting to swim upstream against perverse financial incentives. These applications also have enormous long-term potential to generate huge tangible benefits to the quality and value of health care delivery in our country.

Preventive care services enabled by health IT

Evidence-based preventive care services are underperformed in the United States by as much as 45 percent.⁵ Reasons for this deficiency include lack of payment for preventive services combined with patients and providers simply not remembering to have these services done and not having any kind of “systems” to help them keep track of which services patients need and whether patients have followed through with services ordered or referrals generated.

Health IT can help both providers and patients with relevant and actionable clinical reminders that work at the point of care, displayed for the provider and patient during a patient encounter. Clinical reminders can also be displayed as part of a “population management” or registry function, with dashboards or reports that show which patients in a clinician’s patient population are missing key screenings and tests. Patients can then be contacted via automated calls, text messages, or emails regarding the need for a test or screening.

MedStar Health, a non-profit community-based health system operating in the Baltimore/Washington metropolitan region, is an already-up-and-running case in point. MedStar Health utilizes a customized EHR system to enable much more consistent delivery of preventive and other protocol-driven care. When a patient comes to visit a MedStar Health physician, the physician's EHR proactively reminds the physician about any current gaps in the patient's preventive care regimen.

A patient, for example, may have come in to see the physician about an upper respiratory infection that won't go away with over-the-counter medication—upon which the EHR reminds the physician that the patient is also overdue for breast and cervical cancer screening. The physician can then electronically reference all of the possible follow-up actions and launch them with a single click. MedStar Health providers can also view the overall status of all of their patients to keep track of overall preventive care services through reports derived from clinical information in the EHR, which providers can use to auto-generate reminder letters and secure emails to patients regarding needed preventive services.

The protocols that govern these preventive care actions are physician-driven—meaning they are all iteratively defined by MedStar Health physicians and clinical leadership via a best practices committee and EHR clinical content committee. The objective is to enable physicians to have the knowledge they need, presented 100 percent of the time at the moment they and their patients need it, and to make it easy to take desired clinical actions. The objective is *not* to compel physicians to do what the computer is telling them to do, but rather for physicians and their staff to have consistent help executing what they would like to happen as a baseline path of execution—with the ability to make exceptions wherever and whenever it's appropriate to do so.

The utilization of health IT to power preventive care is simple, effective, efficient, and quite doable today, but is unfortunately not the norm due to a provider reimbursement environment that generally does not reward proactive preventive care. Yet a number of prominent practitioners using this approach, including leading integrated health care organization Kaiser Permanente and Hill Physicians Medical Group, the nation's largest independent practice association, have aligned economic incentives and health IT investment to power data-driven preventive care in models similar to MedStar's. These health care organizations have experienced considerable success executing this kind of health IT-powered preventive care model at scale.

Broad implementation of health IT-powered preventive care would generate substantial improvements in individual and population health. Today, about 54 percent of Americans get appropriate screenings for colorectal cancer, 69 percent for breast cancer, and 81 percent for cervical cancer. Bringing these rates closer to 100 percent would save up to 45,000 lives per year. Bringing influenza and pneumococcal vaccination closer to 100 percent would save up to an additional 39,000 lives per year.⁶

Broad implementation
of health IT-powered
preventive care would
generate substantial
improvements
in individual and
population health.

Studies indicate that less than 20 percent of preventive care services actually reduce medical costs, as cost savings from averted events are offset by the increased cost of preventive services,⁷ but there is also widespread consensus that improved prevention can significantly improve the value we are getting for our health care dollars in terms of health and productivity.⁸ Effective preventive care en masse may even actually produce net cost savings if the frequency of screenings is appropriately “tuned” based on risk factors and emerging medical evidence. This is knowledge that health IT could also help physicians track and then act upon.

Chronic disease management enabled by health IT

Evidence-based chronic care management is performed appropriately in the United States only about 56 percent of the time.⁹ And more than 75 percent of health care dollars are spent on chronic diseases such as diabetes, hypertension, heart disease, stroke, cancer, pulmonary conditions, and mental disorders.¹⁰ This is the area of the U.S. health care system that requires significant improvements more than any other.

Clinical decision support similar to what we previously described for preventive care can be embedded in EHR workflow at the point of care and proactively at the patient population-wide level via registry reporting and dashboards. As a result, patients and overly busy health care providers can be constantly reminded of a patient’s status against recommended national guidelines; gaps in care across providers’ patient populations can be easily identified; and (if appropriate) automated reminders can be issued to the patient to come in for needed care.

At MedStar Health, clinical providers utilize an EHR “patient dashboard” to track a patient’s status against chronic conditions. The provider can scan the dashboard either to determine a course of action to address any area of care deficiency (shown in yellow or red) or to easily drill down to any of a number of more detailed dashboards. The “diabetes drill-down” for a patient, for example, may show that his blood pressure is borderline, his pneumonia shot is overdue, and that his body mass index is too high.

Medstar Health providers can also access a patient population-wide dashboard for all diabetics in the practice. Staff can use this dashboard to send reminders to the subset of diabetics who have overdue tests or services. Physicians utilize a version of the dashboard to see not just who is missing care but also summary test result values, such as cholesterol or hemoglobin A1c, for each patient.

These health IT-powered dashboards provide MedStar Health providers with the ability to easily see where their entire patient population stands against the chronic conditions that physicians are trying to manage. This allows them to identify quickly which patients may be in emerging trouble and take efficient follow-up actions accordingly.

This is a level of “data visibility” that is absolutely impossible to imagine reproducing on an ongoing basis in an environment where each patient’s data are sitting in a paper chart. And the lack of such visibility is unquestionably a major contributor to why Americans don’t get nearly half of the evidence-based chronic care they are supposed to receive.

Finally, health IT can enable physicians to get meaningful ongoing performance feedback on how they are doing in the management of chronic diseases. At MedStar Health, physicians can access electronic profiles of how they are doing compared to the top performing 10 percent of their peers against key dimensions such as percentage of diabetics with hemoglobin A1c under 7.0, or the percentage of patients at cardiovascular risk who are taking aspirin.

As with preventive care, health IT-powered proactive management of chronic disease is not widespread in the United States, due principally to a provider payment system that does not reward proactive chronic disease management. Yet there are islands of notable effort toward the development and implementation of such care models. In addition to MedStar Health, another prominent example is the Primary Care Information Project in New York City, a large-scale EHR deployment that focuses explicitly on the improvement of population health, with a particular focus on cardiovascular disease—the leading killer of Americans and the single largest use of health care dollars (33 percent of total U.S. health care spending). In pursuit of this objective, this city-funded initiative has developed and deployed chronic disease tracking and clinical decision support capabilities similar to what MedStar Health utilizes above.

Encouragingly, a recent pilot project by Kaiser Permanente of Colorado that featured the use of such health IT-powered capabilities by cardiovascular care teams helped to improve the number of patients achieving their target cholesterol goals from 26 percent to 73 percent of patients. In the same pilot project, heart attack deaths fell by 73 percent, and costly emergency interventions were avoided.¹¹

It is important to point out, however, that health IT alone did not achieve these improved outcomes. Health IT was essentially an enabler of a comprehensive, highly proactive approach that Kaiser developed toward chronic disease amid the fertile soil of the right financial incentives (given Kaiser’s vertical integration and global accountability for its patients’ health care costs). But it is certainly the case that Kaiser’s EHR and clinical care registry have been vital ingredients in its success.

Widespread implementation of health IT-powered chronic disease management would generate significant improvements in individual and population health. On a national scale, U.S. cardiovascular disease performance is dismal:

Health IT can give clinicians a level of “data visibility” into their patients’ health status that is impossible to imagine producing in a world of paper medical records.

- Only 33 percent of Americans who are at increased risk for cardiovascular disease are taking aspirin.
- Only 44 percent of Americans who have hypertension have adequately controlled blood pressure.
- Only 29 percent of Americans who have high cholesterol have it adequately controlled.
- Only 20 percent of smokers who are trying to quit actually get help.¹²

By improving levels of performance on the measures above to what is achieved in the Kaiser Permanente system—enabled by health IT—we could prevent 1 million heart attacks and strokes every year.

Broadly applied, long-term prevention of chronic disease is unlikely to reduce costs, due to the fact that cost savings from averted disease are offset (or more than offset) by the increased costs of preventive activities.¹³ However, chronic disease management can substantially improve the value of what we are getting for our health care dollars in terms of health, productivity, and quality of life.¹⁴

In addition, there is emerging evidence that near-term chronic disease care that is targeted at “high risk” chronically ill patients can indeed result in substantial cost savings in the form of costly interventions and hospitalizations that are avoided. A 2005 RAND analysis of potential effects of near-term disease management for asthma, congestive heart failure, chronic obstructive pulmonary disease, and diabetes indicated that the United States could save as much as \$28.5 billion annually if such programs were universally applied.¹⁵

A more recent analysis by the PROMETHEUS Payment initiative, a non-profit payment reform research organization, indicates that for asthma, congestive heart failure, chronic obstructive pulmonary disease, diabetes, hypertension, and coronary artery disease, as much as 40 cents of every dollar are spent on potentially avertable complications—complications that are avertable through improved tracking of key metrics such as blood pressure and proactive care.¹⁶

Care coordination enabled by health IT

The fragmentation of the U.S. health care delivery system is well documented. Approximately 75 percent of Medicare spending is expended on beneficiaries with five or more chronic conditions and who see an average of 14 different physicians each year.¹⁷ More often than not, solid care is provided by each individual provider, but because each provider acts on his or her own, treatment decisions sometimes interfere or interact negatively with those made by a colleague, and costs are higher due to redundancy of tests that are ordered and services rendered.

EHRs can include specific decision-support and connectivity tools to enable consensus and coordinated action among care providers and patients. One elementary but effective model uses faxes or secure messaging of relevant summaries and care plan changes so that each health care provider has the opportunity to review and comment on all relevant or shared information. While this approach shares non-structured information in something less than real time, it still provides an advantage to the status quo.

A more advanced model, such as that piloted by Dr. Steven Clemenson of MeritCare in North Dakota, utilizes a shared dashboard in real time. This approach offers different views for doctor and nurse and allows for doctors and other providers to work together “on the same page,” including sharing decision support, reminders, and task lists.

Health IT-enabled care coordination can be applied both in the context of the management of a patient over the long term—such as in a chronic disease management situation—as well as in a care episode centered on a given surgical procedure or course of therapy. Geisinger Health System in Pennsylvania has pioneered the standardization and automation of care processes to improve adherence to evidence-based guidelines for both chronic conditions and acute interventions. For open-heart surgery, for example, Geisinger cardiovascular surgeons developed a best-practices process based on American College of Cardiology and American Hospital Association guidelines that covers everything from preoperative assessment to postoperative care. Geisinger then configured its inpatient and outpatient EHR to coordinate the work of a “virtual team” of generalist physicians, specialist physicians, nurses, therapists, and support staff against this best-practices process.

The result? The percentage of patients for whom each key step in the process was performed increased to 90 percent from 60 percent in three months, and the percentage of patients discharged directly to home increased to 93 percent from 81 percent.¹⁸ In addition, hospital readmissions for bypass surgery patients dropped by 44 percent.¹⁹

A critical reason why Geisinger has been successful in developing and executing this health IT-enabled care system is because it has constructed financial incentives in favor of doing so. In this case, Geisinger sells bypass surgery care for an all-inclusive, guaranteed fee to employers. Under this “bundled-case-rate” model, Geisinger does not profit from hospital readmissions and duplicative testing, and therefore is not penalized for the execution of a health IT-powered care model that decreases readmissions and duplicative services dramatically.

The absence of similarly aligned financial incentives for the preponderance of other U.S. health care provider systems is the chief explanation why health IT-powered care coordination models such as Geisinger’s have not yet materialized en masse. Health care system payment reform would help resolve this problem.

Health IT helped
Geisinger Health
System reduce
hospital readmissions
for bypass surgery
patients by 44 percent.

"E-care"

A substantial portion of office visits to a doctor or clinic could be provided as non-visit-based care, or "e-care," at a lower cost and enhanced patient convenience while preserving or improving quality. The technology currently exists for secure Internet-based medical care, connected to existing EHRs. Kaiser Permanente of Hawaii has recently shown the value of "virtual visits" by reducing the rate of in-person office visits by 26.2 percent between 2004 and 2007 after implementation of a comprehensive EHR system enabled a significant increase in scheduled telephone visits and secure electronic communications between physicians and patients.²⁰ Another example of the optimization of non-visit-based care has been illustrated by the Greenfield Clinic of Portland, Oregon, where almost 80 percent of patient care needs are currently met by patient-provider communication via telephone or secure electronic messaging.

Conditions amenable to e-care include certain acute problems and many chronic ones, such as diabetes and high blood pressure. Existing e-care models currently being practiced tend to be reactive, meaning the patient initiates an e-visit. It would be technologically straightforward to build calendared decision-support capabilities for doctors and patients so that e-care is used not just when the patient feels sick or has an out-of-range blood sugar or blood pressure level, but also based on a predetermined frequency of provider-initiated encounters. Such a strategy could also be used to provide clinician-guided self-care options for the patient.

Again, however, e-care models, whether reactive or proactive, are rare and unlikely to spread widely under our current provider reimbursement system. Kaiser Permanente is successfully using an e-care model because it is vertically integrated and actually benefits financially from providing more efficient care. Similarly, Greenfield Clinic collects a per-person annual fee of a few hundred dollars per year for all primary care delivered, freeing itself from the perverse incentives of a general reimbursement system that pays purely based on volume of in-person office visits. In contrast, if the average U.S. primary care practice reduced its in-person office visits (the core activity for which it is paid) by 26 percent to 80 percent, then it would of course go bankrupt.

Knowledge-based medication management

Paper-based prescribing is at best an accurate reflection of the best thinking of the prescribing physician at that moment in time. Electronic prescribing improves on this process by adding legibility, checks on drug-to-drug and drug-to-allergy interactions, and information regarding which drugs are on the insurer's formulary. In its current state, however, e-prescribing typically misses key opportunities, such as assessment of medication appropriateness, cost-effectiveness, and multiple other safety features (drug-to-condition, drug-to-sex, drug-to-age, and drug-to-lab checks).

It is the aspiration of a knowledge-based medication management care system to include these more advanced capabilities. The key is to move from the simple electronic capture and transmission of prescriptions to the real-time application of comprehensive knowledge at the time of initial prescription and prescription renewal in order to facilitate the most appropriate, most cost-effective, and safest choice of medications, or the avoidance of medication.

Achieving knowledge-based medication management requires only minor advances in medication decision-support and e-prescribing messaging capabilities, as well as additional time and effort on the part of prescribing providers. More fundamentally, it requires a provider payment system that supports the investment of provider time and resources in effective medication management.

How to unlock the ability for health IT to improve health care delivery and unleash the “virtuous cycle”

It should be apparent by now that key themes are emerging in this discussion. We believe that health IT can power practical, near-term, highly plausible improvements in the delivery of preventive care, chronic disease management, care coordination, non-visit-based care, and knowledge-based medication management. These health IT-powered care capabilities can generate substantial improvements in health, quality, and care efficiency.

To achieve these clearly positive outcomes from our health care system, however, will require reforms to our current health care provider payment system in order for health IT-powered care capabilities to develop, spread, and be consistently and optimally used. There are two interlocking steps needed to achieve this clearly desirable end—commit to meaningful provider payment reform and implement the HITECH program explicitly as an accelerator of care delivery innovation and payment reform. To this we now turn.

Commit to meaningful payment reform in health reform legislation

Without reform of the U.S. health care reimbursement system, health IT-enabled improvements of our health care delivery system will be sharply inhibited. A medical practice, for example, might purchase an integrated clinical registry to generate patient reminders, but doctors would be very unlikely to work the registry, as that would take hours away each week from the visit-based care that is the financial lifeblood of the practice. A doctor who spends a few extra minutes per visit to make sure that all protocol-driven care is up-to-date must either stay longer each day or see fewer patients.

Similarly, doctors are almost certain not to use e-care for acute and/or chronic care without payment reform because doing so would substitute a substantial portion of paid office visits with unpaid e-care. Profit margins are already thin for most physicians, particularly in primary care, so even a small decrease in office visit revenue would dramatically reduce physician income.

It is no coincidence that the most prominent existing examples of health IT-enabled care are at organizations such as Kaiser Permanente, Geisinger, and Hill Physicians, where economic incentives are aligned to encourage the adoption and use of these critical health

IT capabilities. Alas, these health organizations are the exceptions. Most U.S. health care providers are trapped in a “toxic” reimbursement environment that actively discourages implementation and operation of beneficial health IT-enabled care innovations.

That’s why it is critically important for health reform legislation now being developed by Congress to commit to the “detoxification” of our health care reimbursement system and create a strong business case for improving the quality and value of health care delivery. Provider payment reform provisions should encourage (and certainly not continue to discourage) prevention, chronic disease management, care coordination, e-care, and knowledge-based medication management. While there are multiple ways to accomplish this, the following litmus tests should be applied to the provider payment reform regimes outlined by or developed under the forthcoming legislation:

- Is the improvement of individual and population health rewarded?
- Is collaboration among health care providers to achieve improved health rewarded?
- Are providers rewarded for achieving efficiencies in care such as elimination of duplicate services, avoidable hospital readmissions, and unnecessary in-person visits?

If health reform legislation contains a strong commitment to move toward new payment regimens that meet the tests above, then it will decisively aid the development and widespread adoption of truly beneficial health IT.

A Medicare payment reform mandate, combined with provision of the resources required by Medicare to research, develop, and implement truly value-based payment systems, will provide a powerful signal to health care providers that there will in fact be a sustainable business case for health, quality, and value improvement. Medicare’s payment reforms are also likely to be “force-multiplied” by their duplication in the private sector. The reason: private payers tend to emulate what the Centers for Medicare and Medicaid Services execute in terms of payment policy.

In addition to realigning provider incentives toward health, quality, and efficiency, payment reform legislation can also remove tactical obstacles to the effective utilization of health IT to improve overall health care. Chief among these smaller-bore but high-impact actions is the reboot of so-called evaluation & management, or E&M, documentation and coding rules governing the billing of physician office visits.

Current E&M rules, which are quite elaborate, encourage unnecessary verbiage and verbosity in clinical documentation, leading to excessively long medical notes that communicate little that is clinically meaningful. In response to provider demand, EHR vendors have developed and instituted schemas for automated guidance of E&M documentation and coding. This embedding of E&M rules into EHR workflows has complicated those workflows and the notes they produce greatly—causing many health care providers to view EHR-generated notes as legible but meaningless and the process of EHR note documentation as highly cumbersome, time-consuming, and a major drain on provider productivity.

It is critically important for health reform legislation to create a strong business case for improving the quality and value of health care delivery.

An attractive alternative would be to shift provider payment away from using current E&M rules to a payment system that rewards quality, efficiency, and effectiveness, while focusing documentation on what is appropriate for clinical purposes. We recommend reauthorizing or otherwise following through on demonstration projects to replace E&M coding—projects originally called for by Section 941 of the 2003 Medicare Modernization Act in the wake of a 21-to-1 vote in 2002 by the Department of Health and Human Services’ Advisory Body on Regulatory Reform that called for the elimination of current E&M coding requirements.

These demonstration projects would develop and test new documentation models that focus on what clinicians actually need to document for the purposes of patient health. The reboot of E&M documentation and coding would simplify the workflow of EHRs and dramatically improve their usability more than any other conceivable action—a move that is especially important, given that lack of EHR usability is a key current barrier to widespread EHR adoption and effective use.

Implement HITECH as an accelerator of care delivery innovation and payment reform

The health care payment reform required to encourage true health IT-powered care innovation has been crippled by the absence of robust health IT. All of the provider-payment reform ideas now under any level of consideration by Congress—among them, pay for performance, medical home (a major enhancement of primary care), capitation/subcapitation (fixed payments per-member-per-month for care), bundled care payments, evidence-based case rates, and shared savings models such as accountable care organizations and bonus-eligible organizations—require the ability to track population health status and report quality measures.

This is because such data are required to determine the magnitude of payment, as is the case in the classical pay-for-performance model. Or it’s because such data are required to ensure that the payment arrangement is not driving underutilization, as would be the case under capitation/subcapitation, bundled care payments, and shared savings models. Or it’s because such data are required to determine both the size of payment and to safeguard against potential underutilization, as is the case in “medical home” payment arrangements, which combine per-patient-per-month care coordination payments with performance-based bonuses.

Without health IT, providers cannot provide these quality metrics. Without these metrics, payers cannot operate value-based payment systems.

The HITECH program represents a golden opportunity to greatly accelerate payment reform and care delivery innovation by helping to spread health IT capable of supplying the data required to power new value-based payment systems and helping clinical providers to improve the value of the care they deliver.

HITECH, however, will fail to accomplish this objective if it merely subsidizes the adoption of existing health IT in the context of existing care delivery operations. That's why we recommend pursuing an optimal HITECH implementation plan with three major components:

- A results-oriented standard for the “meaningful use” of health IT
- Widespread achievement of “meaningful use” by health care providers, driven in significant part by a results-oriented implementation of the Regional Health Information Technology Extension Centers program
- Tight coordination of the health IT program with health care payment reform

We'll now examine each of these key HITECH implementation components in detail.

A results-oriented standard for the “meaningful use” of health IT

At its core, HITECH rewards not the purchase of health IT but the “meaningful use” of health IT. The vast majority of the \$19 billion in HITECH investments go to temporary bonuses paid by Medicare and Medicaid to health care providers who can demonstrate “meaningful use of certified EHRs.” These payments range from \$44,000 to \$64,000 per physician and up to \$11 million per hospital, paid out over five years.

The criteria for “meaningful use” and “certified EHR” are decisively important. The HITECH Act specifically says these criteria should include electronic prescribing, health information exchange, and quality reporting, broadly defined. Initial versions of these criteria and supporting technical standards for data exchange must be adopted by the Secretary of Health and Human Services by December 31, 2009.

The definition of “meaningful use” should flow directly from our central objective of improving the quality and value of our health care delivery system via a “virtuous cycle”: focusing on uses of health IT that can help clinicians improve the outcomes and value they deliver and that accelerate reform of the payment system to support these care innovations on an ongoing basis. The standard for “meaningful use” must be feasible for the Centers for Medicare and Medicaid Services to implement. But if this standard is to flow from the central result we desire, then it should initially include:

- **Tracking of patient-level clinical information**—the searchable, structured capture of patient problem lists, medication lists, allergies, vitals, and lab results. This gives health care providers true “data visibility” into their patient populations—visibility that is essential to power improved preventive, chronic, non-visit-based, and knowledge-based medication care management, as discussed earlier.

- **Application of decision support by health care providers in order to help improve adherence to evidence-based best practices**—at the point of care and across providers’ patient populations for the purposes of proactive preventive, chronic, and knowledge-based medication care management.
- **Transacting electronically with relevant stakeholders**—via electronic prescriptions, receipt of drug formulary information, receipt of lab results, eligibility verification, transmission of patient summary data to other providers, and receipt of patient summary data from other providers. This is not only vital to the efficient collection of patient-level clinical information by health care providers but also to power the care coordination models discussed earlier.
- **Reporting of the quality and health metrics required to power payment reform**—these will likely be a focused set of meaningful outcomes metrics, such as the percentage of patients with hypertension whose blood pressure is under control, and evidence-based clinical process metrics, such as the percentage of patients at increased risk for cardiovascular disease who are taking aspirin. Health IT gives providers the ability to capture and transmit these metrics far more affordably and easily than ever before. These metrics should be updated and improved on an ongoing basis as payment reform research progresses.

As anticipated by the HITECH Act, these criteria should also be made more stringent over time. The natural extension of this approach to “meaningful use” would be to introduce actual performance against targeted outcomes and process metrics as a key part of the definition of “meaningful use” in years 3 to 5 of the HITECH incentive payments program. This would be consistent with how Medicare, for example, is operating its current EHR demonstration project.²¹

This results-oriented definition of “meaningful use” is explicitly geared to help accelerate care delivery innovation and the payment reforms required to create a sustainable business case for those innovations. Of equal importance: this definition does not dictate hyper-specific technical ways to achieve the results it seeks. This approach is meant to encourage innovation in the capture of patient data, the injection of decision support, the execution of clinical transactions, the production of quality data, and the achievement of quality goals.

In the same spirit, the definition of “certified EHR” should follow directly from the definition of “meaningful use.” In essence, “certified EHR” should mean “ready to be meaningfully used,” or ready to support the activities above—nothing more, and nothing less. Its definition should focus on the results desired, and not on how those results should be achieved, thereby encouraging innovation in the health IT industry regarding the most efficient ways to deliver those results.

The “meaningful use” standard will represent a powerful signal to health IT vendors to innovate. In the absence of financial incentives for medical practices to invest in health and quality improvement, there has been an absence of demand for health IT vendors to develop capabilities to support health and quality improvement. Instead, health IT vendors have concentrated their efforts on supporting documentation for billing and malpractice purposes. Building capabilities into existing and near future EHRs to enable enhanced preventive care, chronic care management, care coordination, e-care, and knowledge-based medication management is not difficult, and does not require any technological breakthroughs. All that is required is the presence of a business case to create market demand.

A results-oriented implementation of the Regional Health Information Technology Extension Centers program

The ability of HITECH to help accelerate payment reform and care innovation is a direct function of how many providers can attain “meaningful use” of health IT. The Medicare and Medicaid incentives for “meaningful use” should help significantly increase successful adoption and use of health IT, particularly in larger practices and hospitals. But many health care providers—particularly small practices and “safety net” providers who serve the underserved—lack the expertise and resources to purchase, install, and use information technology to innovate care.

HITECH does provide for the creation of “Regional Health IT Extension Centers,” or RHITECs, which could be structured to meet this need for up to 200,000 physicians if empowered appropriately. It is vital that the RHITECs be incarnated as results-oriented entities that are focused single-mindedly on the achievement of “meaningful use” by client health care providers and are armed with the accountability and resources to make this happen.

RHITECs should offer a comprehensive package of services geared to helping health care providers achieve “meaningful use,” including coordinated procurement, implementation assistance, vendor relations (driving quality informatics), and quality improvement. In order to realize economies of scale and accountability, RHITECs should provide group purchasing and overall project management structures. RHITECs should also tailor their capabilities and work to fit the unique needs of each of their communities.

Through a competitive mechanism, the Office of the National Coordinator for Health IT should select and fund 20 to 30 RHITECs in 2009 and 20 to 30 additional ones in 2010. There may be a need for more than one in populous states; conversely, one RHITEC may cross state boundaries. Applicants should be nonprofits or governmental organizations, and should be based out of local trusted entities such as quality improvement organizations or physician collaboratives with proven operational capacity and the demonstrated ability to garner the 50-percent match requirements of the RHITEC program through broad-based participation of physician practices and health plans.

RHITECs should be at substantive financial risk for achieving “meaningful use” targets by virtue of having their revenues fundamentally dependent upon attainment of “meaningful use” by client health care providers. The National Coordinator for Health IT should have the ability to revoke RHITeC charters and seek new RHITeCs in areas where RHITeCs fail to meet these performance thresholds.

In support of these RHITeCs, the Office of the National Coordinator should establish a National Health IT Extension Center that will help set up RHITeCs and assemble and develop content and tools for their use, taking advantage of existing national resources, such as CMS’s Doctor’s Office Quality—Information Technology initiative, existing community projects such as New York City’s Primary Care Information Project, and the early experiences of RHITeCs as they emerge. This National Center will also identify successful projects and provide grants for development of lessons learned, establish social networking and distance-learning programs for RHITeC staff, identify structural regulatory and technical barriers to address, and define requirements for annual evaluation of RHITeCs.

The majority of the National Coordinator’s \$2 billion HITECH budget should go to seed RHITeCs, but the National Coordinator should also pursue a highly targeted effort to help spur the development of health information exchange capabilities to support “meaningful use”—in particular, the facilitation of electronic lab transactions and the interchange of basic patient data between local providers. The government’s health-information-exchange investments should aim to do nothing more and nothing less than enable “meaningful use.” This will ensure that our national investment in both health IT and health information exchange is made explicitly in service of care delivery and payment reform.

Tight coordination of the rollout of health IT and payment reform

The advance of health IT and payment reform should be executed in close coordination, with each informing and aiding the other. The quality metrics desired by Medicare to power payment reform should directly inform the evolving definition of “meaningful use.” Data collected via the spread of “meaningfully used” health IT should help power the development and refinement of reformed payment models. A strong public commitment to and progress toward payment reform should help cement the business case for health IT adoption and “meaningful use.”

Congress can facilitate the coordination of Medicare payment reform and the HITECH program by formally recognizing the linkage between the two and asking for periodic reports on their integration and joint execution. The combination of the two programs is vastly more likely to help spur care delivery innovation and health improvement than either will separately.

Conclusion

With the passage of the HITECH Act earlier this year as part of the sweeping American Recovery and Reinvestment Act of 2009, our country has a remarkable opportunity to utilize health IT to significantly accelerate the reform of our health care system. Health IT can be harnessed to power significant improvements in preventive care, chronic disease management, care coordination, e-care, and knowledge-based medication management.

But this will happen to its full potential only if spurred appropriately by a strong commitment to payment reform in health reform legislation and optimal execution of the HITECH Act. This effort must include a results-oriented definition of the “meaningful use” standard for HITECH incentive payments, a results-oriented implementation of the Regional Health Information Technology Extension Centers (RHITECs) program, and tight coordination of efforts to roll out health IT and payment reform.

If HITECH implementation and health reform legislation are shaped and coordinated accordingly, the country will unleash a “virtuous cycle” of health IT adoption, care delivery innovation, and payment reform that will improve care significantly and help catalyze long-term transformation of our health care system as a whole.

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Todd Park is a Senior Fellow (part-time) at the Center for American Progress, focused on health IT and health reform. He combines an accomplished track record as a health IT entrepreneur in the private sector with a deep passion for public policy, and is an energetic advocate for enlightened public-private leadership on health IT and reform issues. In 1997, Mr. Park co-founded athenahealth and co-led its development over the next decade into one of the most innovative, socially oriented, and successful health IT companies in the industry. Having retired from athenahealth's management team and joined its Board of Directors in 2008, he has co-founded and serves as a Board Director of another company, Maria Health/Ventana Health, which is developing a new Web-based service that will help patients navigate the complexities of the U.S. health care system. Mr. Park also currently serves as senior health care advisor to Ashoka, a leading global incubator of social entrepreneurs. In this capacity, he is helping to create a venture to bring affordable, scalable health to the rural poor in India via a combination of primary care telemedicine, low-cost drugs and diagnostics, and clean water. Prior to athenahealth, Mr. Park served as a management consultant with Booz Allen Hamilton. He graduated from Harvard College with an A.B. in Economics, magna cum laude and Phi Beta Kappa.

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Conflicts disclosure

Todd Park co-founded and currently serves on the boards of physician IT company athenahealth and consumer health IT company Maria Health/Ventana Health. Although he does not serve on the management team of either and is not employed by either, he is a significant shareholder in both. He also serves on a volunteer basis as senior health care advisor to Ashoka, a leading incubator of social entrepreneurs. The Center for American Progress believes Park's professional experience gives him unique insights into how policy affects whether information technology achieves its potential to improve the quality and efficiency of health care.

The Center for American Progress is a nonpartisan research and educational institute dedicated to promoting a strong, just and free America that ensures opportunity for all. We believe that Americans are bound together by a common commitment to these values and we aspire to ensure that our national policies reflect these values. We work to find progressive and pragmatic solutions to significant domestic and international problems and develop policy proposals that foster a government that is “of the people, by the people, and for the people.”

