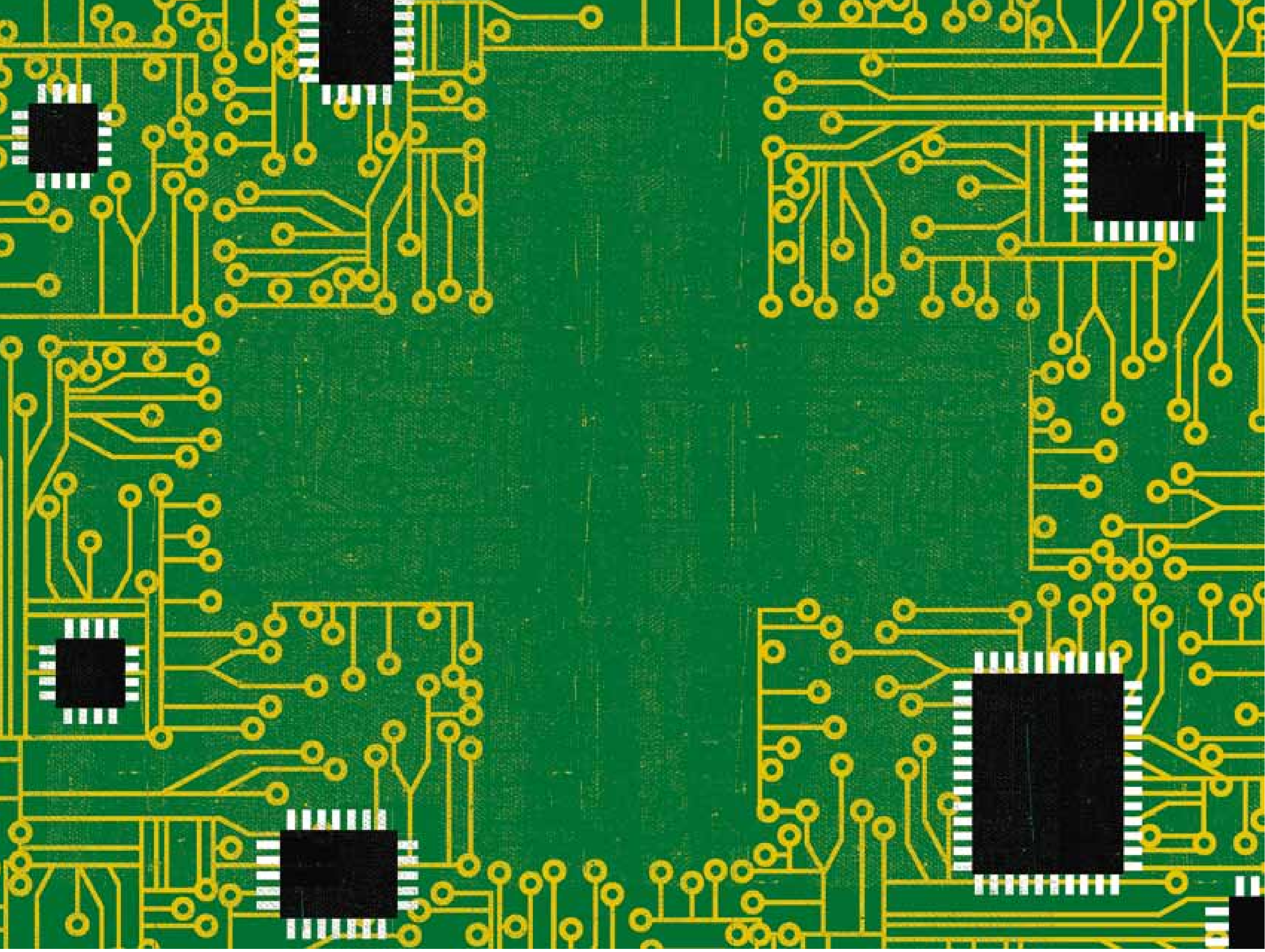

Debunking the three leading misperceptions about health care IT

A set of erroneous assumptions about health care IT is causing many projects to fall short or fail. Clearer thinking and leadership can help health care organizations get a better return on their IT investments.

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Payors, providers, and health systems are spending an increasing amount on information technology, catching up to the expenditure rates in other industries. Even during the current recession, IT spending has continued to rise in health care, although it has declined in most sectors.

The rationale for the increased spending is clear: significant opportunities exist today to use IT to improve access to and the quality and cost of health care, especially by coordinating the actions of the many players involved in preventive health efforts and care delivery. Unfortunately, though, a great deal of health care IT spending is either wasted or produces a much lower—and slower—return than had been anticipated, as the high rate of IT project failures and delays demonstrates.

Why is so much health care IT spending ineffective? A key reason is that many clinical IT initiatives are quite complex, requiring collaboration among multiple stakeholders (including regulators, payors, multiple providers, and patients), who must agree up front on how organizational models of care will change, how technology will fit in, and what types of information sharing will be required. The challenges involved in designing, managing, and implementing these initiatives are therefore substantial.

But there is a deeper issue, one largely unrecognized and therefore unresolved: a set of erroneous assumptions about IT pervades the health care sector. The IT initiatives undertaken by organizations that subscribe to these assumptions often fall short or fail.

This article debunks three of the most important misconceptions about health care IT: that payors need access to detailed, individual clinical data to generate insights, that enabling patient-centric care requires the rollout of new IT systems in every care setting, and that centralized selection of provider IT systems is necessary to implement electronic health records (EHRs). In each case, we explore the misconceptions, the traps they create, and how the traps can be avoided. A sidebar identifies several other erroneous assumptions about health care IT that hinder payors, providers, and health systems around the world.

Access to detailed clinical data is *not* always required

In the past decade, most industries have come to rely on business intelligence (BI)—the skills, technologies, and processes that enable organizations to drill into their data and derive actionable insights. Without BI, managers would have no way to make sense of the millions of pieces of information their IT systems collect, nor would they be able to use that information to help them better manage their operations and make more fact-based decisions.

However, many health care payors believe that the most valuable insights (the ones that will improve their decision making most) can be generated only if their IT systems have access to detailed clinical data about individual patients. Only access to EHRs, they assume, can ensure their ability to obtain and analyze the necessary types of information.

This misconception is dangerous. Because few payors have access to individual clinical data (but believe that they need it), they do not invest enough effort in analyzing the information they already have. For example, many primary care trusts (PCTs) in the United Kingdom feel constrained by their inability to tap the patient information held by physician practices; they think that this information is necessary for managing those practices and assessing the effectiveness of the interventions delivered. However, a project led by the UK's Department of Health demonstrated that the PCTs already have access to published data about more than 100 quality and performance indicators. The data could yield many of the insights the PCTs are seeking (how care delivery varies among GPs, for example), but few of the trusts are fully exploiting the available information.

German public payors currently have even more patient data available to them, although they too lack access to the clinical information in EHRs. However, the payors do have transactional information about the patients' diagnoses, drug prescriptions, and hospital procedures—data they collect in the course of reimbursing providers. At present, only a few payors are analyzing this information carefully, but the results they can attain with it are substantial. For example, when one of the largest public payors in Germany developed a new BI system to analyze its data, it discovered that many of its covered patients had been coded with the wrong disease or not coded with a previously diagnosed chronic condition.[1] These errors were hurting the payor financially, because funding for Germany's public payors is partially based on the level of illness in their beneficiary populations. Once the errors were corrected, the payor's recurrent funding quickly rose by more than 20 times the amount it had spent on the BI system. In addition, the payor was able to enroll more patients in appropriate disease-management programs.[2]

The German experience illustrates that, even in the absence of EHR access, payors can improve their ability to analyze the information they already have. Although the available information is primarily financial and administrative data, it can compensate for much of the medical data that payors may be missing. The first step is simply to aggregate the information. Payors typically receive and store data from hospitals, clinicians, and pharmacies in separate databases. To make the information more useful, they should link and structure the data based on patient identifiers[3] so that they can determine what medications, treatments, and other interventions each patient has received. What they will find is likely to be eye-opening: some patients are being overtreated, some are being undertreated, and some are being treated the wrong way entirely. These discoveries can help them find specific ways to improve patient care.

Patient-centric care does *not* always require the rollout of new IT systems

Many health systems are trying to move a significant proportion of health care delivery out of hospitals and into the community, or even into patients' homes. The United Kingdom and France, for example, plan to shift a significant amount of activity in this way. But moving care into the community can jeopardize the quality and effectiveness of that care unless all providers can easily share relevant patient information (health history, allergies, medicines, laboratory test results, and appointments, for example).

Many policy makers and health care managers assume that this type of information cannot be shared unless all providers have fully functional clinical and administrative health IT systems. They therefore start by spending a lot of time—and money—developing and deploying sophisticated hardware and software solutions that can deliver a wide range of capabilities in every care setting and only then try to integrate all the data across the care settings. Unfortunately, they often expend much less effort up

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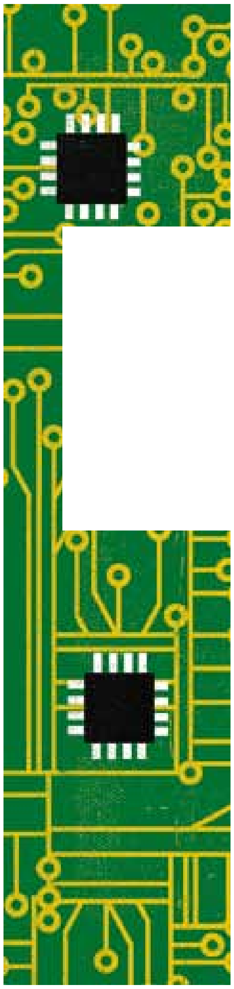
[1] An example of the logic that such analysis would use is this: if a patient is being treated with atomoxetine or methylphenidate and does not have a diagnosis of narcolepsy or cataplexy, he or she should have a diagnosis of attention deficit disorder.

[2] For more information about Germany's disease-management programs, see "How to design a successful disease-management program," p. 68.

[3] A patient identifier is a string of numbers and letters that is unique to each patient. It enables all of a patient's records to be linked but does not necessarily identify the patient himself or herself.



front thinking through more basic questions, such as: Which end-to-end, patient-centric models of care delivery need to be supported? What new organizational roles and processes are required? What are the priority information elements that must be exchanged among providers to coordinate patient care?

In England, for example, some local health care organizations and physician-led networks are trying to develop integrated care models that bring primary care physicians, outpatient specialists, community health nurses, social workers, laboratories, and other providers into physical or virtual networks of care. The hope is that these networks will improve the quality and efficiency of care delivery, especially for patients with chronic conditions. Until recently, these initiatives' IT-enablement efforts have mainly relied on a national program that was focused on deploying clinical systems in each care setting. No one has fully taken up the challenge of designing and delivering a mechanism that will enable relevant patient information to be shared from site to site. As a result, the local initiatives are all struggling to link the information for individual patients from the various sources.

A simpler approach that focuses on actual patient use cases and end-to-end processes is often more effective. In India, the state of Andhra Pradesh wanted to establish a new care model for 65 million people who lived below the poverty line and did not have sufficient access to good-quality secondary care. It set up the state-funded Aarogyasri Health Care Trust, which reimburses more than 400 private hospitals for care delivered to these people. Reimbursement is based on an agreed-upon tariff for each procedure. To minimize the risk of fraud and runaway costs, the trust uses a rigorous process of preapproval and post-verification that is overseen by clinicians in the trust's central office. An efficient, real-time flow of information from the hospitals to the central office is therefore required to enable this process and avoid long delays, which are especially problematic in Andhra Pradesh because patients there often have to travel long distances for treatment.

The trust did not want to invest in an extensive IT solution that could be used in all care settings. Nor did it have the time to design and deploy such a system. Instead, it identified the key end-to-end processes and corresponding information flows that were needed and then designed a simple, Web-based platform around these processes that would permit all parties to collaborate. The total cost to design, develop, and operate the system for the first year was very low. Even hospitals that had nothing more than an Internet connection were still able to participate through a Web browser.

Andhra Pradesh's experience proves that the first requirement for enabling efficient communication among health care providers and payors is not equipping every care organization with an elaborate IT system. Rather, it is important to get all parties to agree on a clear definition of the processes needed to support the new patient-centric models of care and to identify and prioritize the patient information that must be shared to enable those processes. Information sharing can often be delivered through simple technology; it does not necessarily require that every care setting replace or upgrade its clinical and administrative IT systems. In many cases, a relatively simple IT architecture solution can be used.[4] However, the architecture must include clear and enforced standards to ensure the information's security and consistent interpretation, and it must be supported by common identity-management solutions for patients, provider

(continued on p. 86)

[4] IT architecture can be likened to good urban planning. In the absence of good urban planning, even the best buildings will not create an effective new neighborhood; similarly, even the best computer programs will not create an effective IT system without good IT architecture. However, most health care organizations lack IT architecture skills.

Other misconceptions about health care IT

A variety of other erroneous assumptions about health care IT are preventing payors, providers, and health systems from getting the best results from their IT spending. We correct the five most damaging of these other misperceptions below.

The IT department should *not* be solely responsible for defining the solution

Health care organizations that delegate full responsibility for the design and delivery of their IT systems to their IT department or an outside vendor run a substantial risk that the system will not be adopted in the field. Unless clinicians and other frontline staff are intimately involved in a system's design (including its processes, information requirements, and incentives for adoption), the system is unlikely to be fit for purpose, and clinicians will not be willing to adopt it. The system will meet the requirements of the IT department or vendor but not of the health professionals who should use it.

When clinicians do drive the system's design, the impact can be tremendous. At a 1,500-bed hospital in Paris, clinicians from 34 departments helped devise the data-entry templates needed for a new electronic patient note-taking system. The clinicians made sure that the system's first release delivered immediate benefits to them and their colleagues by automating the generation of clinical administration reports and discharge letters, which saved them substantial time. They also made sure that the system's design focused only on what was required, which lowered costs and development time (the system was designed and deployed in less than 12 months, for less than €500,000).

Similarly, the Aarogyasri Health Care Trust in India sought the help of clinicians when it was designing its system: 30 doctors from the trust and more than 250 others from private hospitals helped design the end-to-end workflows and simple data-entry screens required to capture information. Today, the system is used by all 400 hospitals in the network.

Admittedly, clinician time and attention are scarce resources. Thus, the clinicians who work on an IT project must focus on the areas that matter most to them and where they can add the most value. At a minimum, they should be deeply involved in defining the integrated care services and end-to-end workflows, because these two areas are the most important ones to get right to ensure the system benefits and is usable by everyone. Anyone planning a new health care IT system must budget explicitly for clinician participation in the design and deployment phases and have a clinician well respected by peers lead the program.

Business intelligence is *not* always expensive

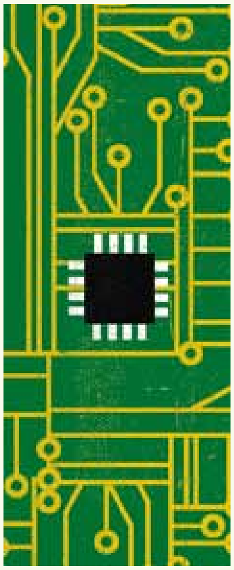
The investments in hardware and software needed for business intelligence (BI) are often costly, but they do not always have to be. Sometimes, smart in-house analytic capabilities using existing software licenses are all that is necessary to enable payors, providers, and health systems to generate the required insights. In other cases, some investment may have to be made, but the returns are typically considerably larger than the investments.

Furthermore, many BI investments can pay off quickly. The UK's Department of Health spent less than €1 million to develop an IT-based comparison tool that uses publicly available health care data. A single analysis conducted by one primary care trust (PCT) trained to use the tool identified an opportunity to cut costs by more than €10 million in ways that would not affect care delivery negatively.

The misperception that BI is expensive harms all stakeholders. It makes many providers reluctant to invest in the applications and training they need to derive insights from their data. It also prevents many payors from overseeing their providers properly, identifying opportunities to cut costs and improve effectiveness, and more.

BI does *more* than merely monitor provider performance

Numerous health care policy makers and managers believe that the sole purpose of BI software is to track and manage the performance of providers against targets and contracts. This misperception makes many providers loath to give payors data about their patients or operations for fear the information will only be used against them.



However, BI can provide substantially greater value if it is used to improve operations and decision making. For instance, some payors have used BI software not to micromanage providers but to generate insights that enable more cost-effective patient care. These payors conducted a cost-benefit analysis of treatments for congestive heart failure and determined that vaccination against pneumonia and influenza is by far the most cost-effective intervention—that is, it delivers the greatest increase in quality-adjusted life years[5] for a given amount of money. Thus, they have prioritized it in their investment plans. Analyses such as this can help payors, providers, and health systems increase the value of their health care spending by enabling them to identify the interventions that will have the best overall impact on patients' lives.

The value of electronic health records is *not* always clear to everyone

Many policy makers and managers are convinced that the value of electronic health records (EHRs) is so obvious that if they can simply find the right technology for creating and sharing these records, all stakeholders will immediately jump on board. However, some payors, providers, and patients may not see benefits for themselves and thus may not be willing to invest the time or money needed to capture information, deploy the required systems, or share information with others. Unless they are convinced that they will benefit from such investments, EHR adoption may lag.

Understanding all the relevant stakeholder segments and involving them in the solution-design and usage-planning process is an effective way to increase buy-in for EHRs. The example cited above from France demonstrates the importance of clinician participation; the example from India shows that similar strong results can be achieved when payors, patients, and managers are brought into the process as well. The participation of all parties ensures that the system's design will provide benefits to everyone. In addition, it makes it easier to align incentives and to arrange suitable compromises when trade-offs have to be made (between privacy and integrated care effectiveness, for example).

A single software package is *not* always needed

One of the biggest challenges in health care IT is getting electronic information to flow seamlessly among the different systems that stakeholders typically use. As a result, many payors and providers have been persuaded, sometimes by IT vendors, into believing that a single software package, with built-in interoperability among all its parts, will solve the communication problem. This is one of the most dangerous health care IT myths. It leads health care organizations into making huge investments in systems they do not understand and that will take years to pay off—if the systems are ever actually implemented (and many are not).

Some health care organizations, however, have generated substantial value from IT initiatives by building modular solutions that target specific problems. Kaiser Permanente, for example, has created "disease registries" and "panel-management solutions" to provide care for patients with long-term conditions. The disease registries log patients' care plans, treatments, and progress, enabling physicians and other care providers to better monitor developments and work proactively to keep the patients on track. The panel-management solutions combine data from the registries with decision rules and visual-display tools, such as dashboards, to guide care providers toward the right actions.

As discussed in the main article, the biggest hurdle to sharing patient information is not what IT system to choose. A much bigger hurdle is getting clinicians, managers, and other stakeholders to agree on how the organizational model and relevant processes will have to change when the new technology is introduced, and what information will need to be shared. A second big hurdle is defining the technical standards and data architecture[6] that will permit the different existing systems to communicate with one another. Buying a single software package from a single vendor does not remove these hurdles; it simply passes on (or even abdicates) responsibility to the vendor. In fact, buying a single software package creates an additional problem: a health care organization that does not understand and control its IT architecture becomes tied to the vendor's products and its future product-development road map for a long time to come.

[5] Quality-adjusted life years are a measure of disease burden that takes into account both the expected quality and quantity of a patient's remaining life; they are used to assess the value for money of a medical intervention.

[6] The term "data architecture" refers to how data are processed, stored, and used by the individual IT components in a given IT system.

organizations, and clinicians, as well as by information-access control rules. In addition, the architecture should include administrative and clinical protocols as well as workflows that define patient processes, such as what care pathway should be followed for a particular condition and patient risk profile. The protocols and workflows can also be used to guide and monitor compliance in all care settings.

Health care organizations can take advantage of this type of IT infrastructure no matter what systems each of them already has—down to the most rudimentary computer capabilities. Waiting until all players have fully functional clinical and administrative health IT systems is unnecessary. It delays collaborations that can save money and boost access to and quality of care.

EHR implementation does *not* require centralized selection and deployment of IT solutions

Health systems around the world are trying to increase the use of EHRs to improve quality of care, avoid duplication of services, and lower costs. Many of them assume that EHR implementation requires a highly centralized approach that selects the technical solutions for all the players and uses only a few vendors to build the entire system.

In the United Kingdom, the National Health Service (NHS), for example, has undertaken a large, centralized initiative, the National Programme for Information Technology (NPFIT), to develop a single EHR for each patient. The initiative's aims have been to connect the UK's 30,000 general practitioners to its 300 hospitals, provide all health professionals with secure access to patients' EHRs, and eventually give patients online access to their records. To accomplish these goals, NPFIT selected and has been managing IT vendors on behalf of the many hospitals, clinics, and physicians it serves.

However, the selection of vendors has met with significant resistance from health care providers. Many NHS hospitals have different IT systems and processes; the choices made on their behalf were not a good fit for most of them. Furthermore, the granting of virtual regional monopolies to a few vendors reduced their incentive to respond flexibly to providers' needs and to innovate regularly. As a result, the program is running several years behind schedule, and many vendors have dropped out.

By contrast, Canada Health Infoway is a federally funded, not-for-profit organization tasked with accelerating the development of EHRs in Canada—but not with choosing and implementing the IT solutions used to deliver those records. Its initial goal was to ensure that 50 percent of Canadians have an EHR by the end of 2010. Infoway deliberately defined its centralized role narrowly: it established a national blueprint and set common standards. The organization has focused most of its efforts on providing incentive funds to help providers, national organizations, and the country's provinces and territories develop their own solutions in line with the national blueprint. Although Infoway uses only limited funding to enforce adherence to the standards set, its most recent report suggests that Canada is well on its way to achieving its EHR goals; projects under the Infoway umbrella are currently under way across the country.

Most industries have found that large, centralized IT programs are prone to failure. Centralized programs may make sense for administrative functions that require a high level of standardization (staff records and payroll, for example), but when a central organization mandates standard solutions for all players irrespective of local differences, it invites resistance and rejection. And when the organization grants a monopoly to certain vendors, it reduces supplier competition and innovation.

To prevent these problems from arising, health systems should avoid defining a single IT solution for EHRs. They should instead establish the conditions that maximize the likelihood of successful implementation but give all players the flexibility to develop their own solutions. The conditions for success typically include:

- A master patient index and other common registries to ensure that patients, clinicians, and provider organizations are uniquely identified
- Common technical and semantic interoperability standards to ensure that the information is consistently interpreted across care settings
- A focus on local solutions and data interchanges rather than nationwide real-time access and updated functionalities, because most of the value for EHR programs arises in local settings
- Broad IT awareness, skills, and leadership among clinicians and management; within the IT community, new skills such as IT architecture, process design, change management, and benefits assessment
- Aligned incentives among all stakeholders, which can include conditional funding (paid upon realization of desired outcomes) and penalties for noncompliance or regulation

In short, giving participants a clear framework for charting their own success works much better than trying to design their success for them.

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Many health care IT projects fail to achieve their potential because misconceptions are so prevalent. The risk of project failure can be lowered if policy makers and managers familiarize themselves with the major health care IT projects that have been successful—and then contrast the approaches used in those projects with their own beliefs about IT and the “wisdom” they receive from vendors and others. Anyone who is planning or overseeing a large and expensive health care IT initiative should take these steps to ensure that the money being spent delivers the improvements in care that patients deserve.○

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