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Health information technology costs and patient safety concerns

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Health information technology;
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Summary Healthcare is a critical issue in our nation. This information was presented to the United States Senate on July 14, 2009. This is a study of the literature concerning Health ER. Barriers and incentives are explored and represented in charts and graphs to indicate the cost of the essential technology to improve record keeping and healthcare. Barriers and incentives are explored and represented in charts and graphs to indicate the cost of the essential technology which will improve record keeping and healthcare. This must be cost effective for the provider and allow records to be accessed in a manner that will not jeopardize patient confidentiality.

An important issue for the patients in Ohio and in the nation is the American Recovery & Reinvestment Act of 2009 (ARRA) that was signed into law by President Obama in February 2009.[1] I specifically want to focus on the impact of ARRA on access to health information technology (HIT). The Institute of Medicine regards the implementation of electronic health records (EHRs) as an essential technology and one of the principle ways to improve health care.[2] ARRA includes more than $20 billion to aid in the development of a robust HIT infrastructure for health care.[3]

Few US doctors or hospitals—perhaps 17% and 10%, respectively—have even basic EHRs.[2] There are significant barriers to their adoption and use, including[1] the technical and logistical challenges involved in installing, maintaining, and updating them, as well as consumers' and physicians' concerns about the privacy and security of electronic health information. Cost is a significant barrier—not only in terms of purchase price, but also based on the perceived lack of financial return from investing in EHRs. The physician has to front money to purchase the EHR system, which may cost anywhere from $20,000 to $50,000, as well as pay $10,000 to $20,000 per year for maintenance. The average EHR is replaced every five years; therefore, there is a short life expectancy.

The financial benefits of office-based electronic medical records (EMRs) systems do not outweigh the cost to clinicians. Information reviewed from past studies, including those of the American Medical Association (AMA), reveal that doctors may see only 11 cents of every dollar saved through the use of EHR.[2] A physician can estimate that it would take about five to six years for an EHR to recoup its cost within a physician office-based practice.[4] BlueCross/Blue Shield of Massachusetts announced it has decided not to require physicians to install EHR to participate in its bonus program.[5] The insurer is not suggesting that EMRs are not worthwhile; it simply realizes that it would be unrealistic to expect physicians to make an investment few could afford.[5]

The Centers for Medicare and Medicaid Services (CMS) proposed rules on meaningful use criteria for the EHRs incentive program. However, the aggressive criteria may

Introduced in the Senate on July 14, 2009 by Sen. J. Dingell (D-MI), Sen. R Andrews (D-NJ), Joe Baca (D-CA), Dale Kildee (D-MI), Carolyn Malone (D-NY), George Miller (D-CA), Frank Pallone (D-NJ), Charles Rangel (D-NY), Fortney Stark (D-CA), Henry Waxman (D-CA). Audience: Sen. Sherrod Brown (R-OH)

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deter many physicians from participating in the Medicare and Medicaid incentive programs. The first incentives start in 2011 and eligible practitioners must show 90 days of using EMRs, which means they would have had to begin using them in October 2010. There are 25 objectives to meet the criteria for meaningful use, and a majority of providers have not set up an EMR system. Studies find that only approximately 30% of physicians will meet the extensive meaningful use criteria, although there is no guarantee there will be enough money for all the providers who meet the criteria.[5]

According to the facilitator of EHR adoption, 55% of physicians have no electronic health records and 46% who have implemented EHR site financial incentives are or will be the reason for adopting EHR.[5] The federal government has allocated billions of dollars via ARRA to aid in the development of HIT systems. Under the federal stimulus package, physicians and hospitals who demonstrate meaningful use of EHRs could be eligible for incentive payments.

The Congressional Budget Office estimates that the federal government could save $12 billion in health payments over 10 years with widespread use of EHRs. However, HIT advocates warn that physician reluctance to adopt EHRs could threaten the goals of the federal stimulus package and the new health reform law. There are concerns about the safety to patient information confidentiality by providers and hospital administrators as a result of the biennial updating of meaningful use criteria. The implementation process should allow enough time for adequate testing of products.

Shifting the rewards of the current health care market from quantity of services to quality of care is a necessary paradigm shift. Adopting HIT is a step toward improving quality of care, but physicians need access to private lenders through guarantees issued by the Small Business Administration as proposed by the *Small Business Health Information Technology Financing Act/ H.R. 3014/ S. 2765.* The House bill passed in 2009, but §2765 is still in the Senate.

History and background

In Ohio, the Ohio Information Partnership (OHIP) comprises the Ohio Osteopathic Association, Ohio State Medical, Ohio Hospital Association, BioOhio, and Ohio.gov, which Governor Strickland designated to lead the implementation and support of HIT throughout Ohio.[5] OHIP has been allocated to receive $46,393,199 for the state's regional extension centers and $16,979,000 for the state's health information exchange, including the Northeast Ohio (NEO) HealthForce, which will receive $1,453,500 to assist 323 primary care physicians.[6]

"Physicians have been slow to adopt health information technologies and EMRs, in part from the financial burden. Policy makers have looked to hospitals to offer financial assistance to providers. However, federal laws and related regulations, including the physician self-referral law—commonly referred to as the *Stark law*—and the anti-kickback statute, were perceived as inhibiting hospitals' willingness to assist physicians. The laws are intended to stop hospitals from offering financial incentives to physicians in return for patient referrals. In an effort to accelerate physician IT adoption, the U.S. Department of Health and Human Services (HHS) in August 2006 issued IT exceptions to the Stark law and IT safe harbors to the anti-kickback statute. In 2007, the Internal Revenue Service (IRS) defined that hospital compliance with the Stark exclusion and anti-kickback safe harbor to assist physicians' EMR purchases would not violate federal tax law."[7]

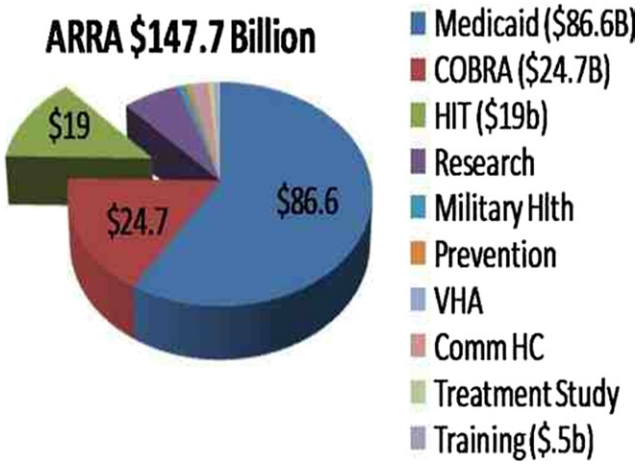

Figure 1 ARRA.

The HIT provisions of ARRA go under the acronym "HITECH," which stands for Health Information Technology for Economic and Clinical Health Act of 2009 (Fig. 1).[8] Congress designed the legislation to improve US healthcare through the development of a solid health information infrastructure while simultaneously stimulating the economy through new investment and job growth.[9] The five goals were to improve quality, safety, efficiency, and reduce health disparities; engage families and patients; improve care coordination; ensure adequate privacy and security protections for personal health information; and improve population and public health.[9] Information technology is increasingly recognized as an important tool for improving patient safety and quality of care, which will promote the practice of evidence-based medicine.[1]

These programs begin the process ". . . of creating a national, private, and secure electronic health information system. The grants are designed to help doctors and hospitals acquire electronic health records and use them in meaningful ways to improve the health of patients and reduce waste and inefficiency," said Dr. David Blumenthal, National Coordinator for Health Information Technology.[1] These programs should also help create the infrastructure for technological advances, which enables patient information to follow patients within and across communicates as the records follow them to emergency department, referrals, and other changes of clinicians. This information is neces-

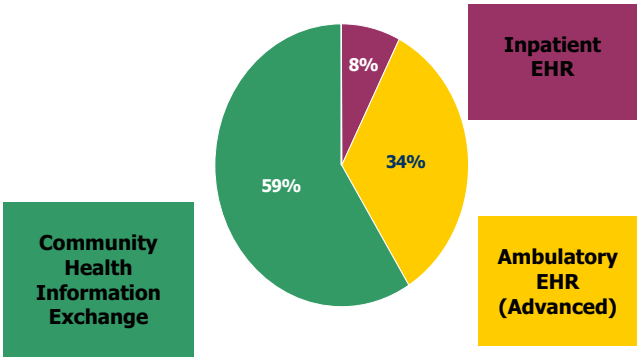

Figure 2 National Health Information Infrastructure Net Estimated Annual.

sary to help doctors and patients make the best medical decisions regarding health care based on improved resources to information. Despite this potential for quality improvement, few physician practices use EHRs.

Purpose of the EHR

The EHR is an electronic record of patient health information created by each encounter in any care delivery setting. Patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data, and radiology reports are included in the patient's EHR.[1] The benefits of the EHR are that the records are legible, interface with laboratories and imaging services, keep track of medications, and are transportable. Some EHR implementations such as COSTAR, VistA, and HELP systems have indeed proved enduring successes.[2,3,10] EHRs advance quality of care and patient safety, facilitate work flow, and decrease costs.[11] The Center for Information Technology estimates an annual savings of $132 billion (Fig. 2).[12]

Incentive payments for adoption of EHR

Incentive payments are based on physicians' meaningful use of information technology. The criterion for meaningful use focuses on safety and quality at the practice level (Fig. 3). Meaningful use is an obvious hallmark of a patient-centered medical home (PCMH) along with care management.[13] Primary care physicians will be accountable for managing and coordinating the care of a population of patients. EHRs will boost data-based decision making and medical accountability, which could lead to financial incentives for eligible providers.

ARRA includes incentives to physicians through Medicare and Medicaid of $44,000 and $63,000, respectively. There are several hoops to jump through—purchasing or leasing an EHR system, integrating an EHR into the practice, and meeting 25 objectives for meaningful use to get these incentives, but ultimately, the physician may not qualify for them. The EHR will improve health of patients and reduce waste and efficiency, but the new technology will take years of trial and error.

Federal financial support for HIT

Under the ARRA, an estimated $19.2 billion in stimulus funds are available to enhance the use of EHR by health service providers and hospitals.[14] Grants have been made available totaling $598 million to establish approximately 70 Health Information Technology Regional Extension Centers.[15] These centers will provide hospitals and clinicians with technical assistance in selection, acquisition, implementation, and meaningful use of certified EHR systems. In addition, grants totaling $564 million to states and Qualified State Designated Entities (SDEs) have been made available to support the development of mechanisms for information sharing within an emerging nationwide system

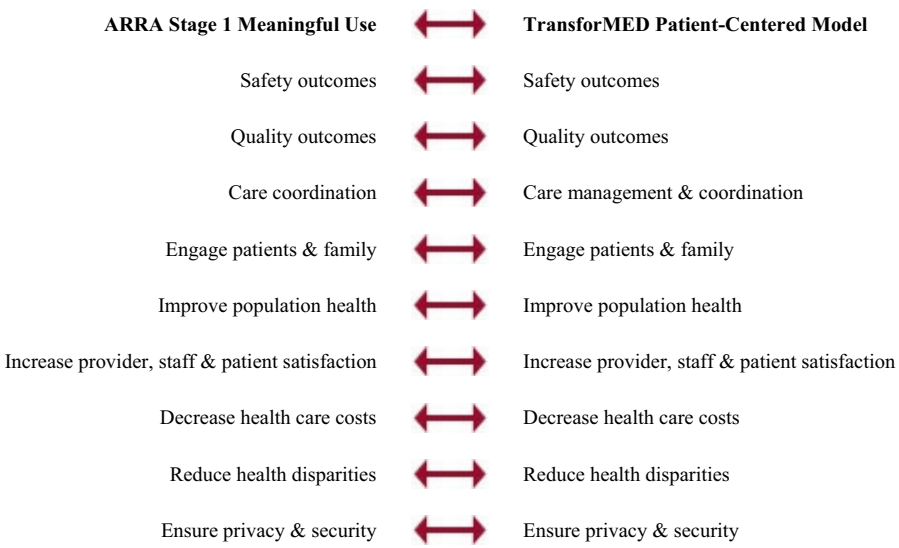

Figure 3 Meaningful compared with PCM.

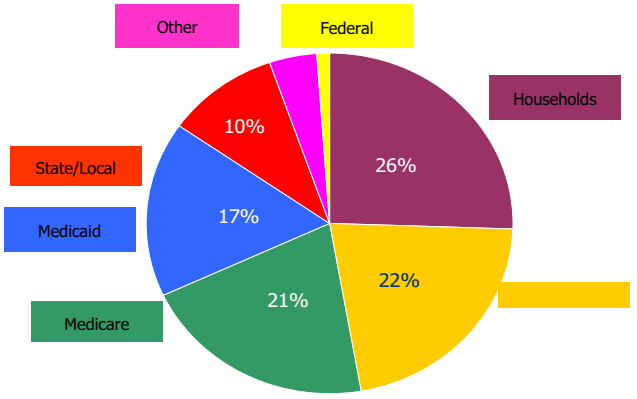

Figure 4 Incentives for Medicaid and Medicare.

of networks. Seventeen billion dollars in incentives will be made available through Medicare ($44,000) and Medicaid ($63,700) to physicians who meet the criteria for meaningful use of EHR (Fig. 4).[16]

Medicare incentive payments would be based on an amount equal to 75% of the Secretary's estimate of allowable charges, up to $18,000 for the first payment year. Incentive payments would be reduced in subsequent years: $12,000, $8,000, $4,000, and $2000, after 2015. Physicians who report using an HER (which is also capable of e-prescribing) would be eligible for EHR incentives only.

Early adopters, whose first payment year is 2011 or 2012, would be qualified for an initial incentive payment up to $18,000. In 2014, the payment limit would equal $12,000. Adopters, whose first payment year is 2015, would receive $0 payment for 2015 and any subsequent year. For qualified professionals in a rural health professional shortage area, the incentive payment amounts would be increased by 10%.

Incentives under the Medicaid program are also available for physicians, hospitals, federally-qualified health centers, rural health clinics, and other providers. Eligible pediatricians (nonhospital based), with at least 20% Medicaid patient volume, could potentially receive up to $42,500, and other physicians (nonhospital based), with at least 30% Medicaid patient volume, could potentially receive up to $63,750, over a six-year period (Table 1).

Criteria for incentive payments

Physicians may start earning incentives in 2011 by demonstrating meaningful use of EHR. Providers will need to have at least 30% of patient volume attributable to Medicaid patients and there is no volume necessary to qualify for additional Medicare incentives. It is not a grant, and there are no guarantees that physicians will qualify. Through "meaningful use," physicians demonstrate their intent to improve quality, safety, and efficiency, and reduce health disparities. Physicians engage patients and families of those whom they treat. Physicians adopting these uses may help improve coordination of care for patients. Clinicians must ensure adequate privacy and security protections for personal health information. Meaningful use can be demonstrated through the use of computerized physician order entry, e-prescribing, recording vital signs and patient demographics, and electronic claim submissions. Physician use of up-to-date problem lists, medication reconciliation, and insurance eligibility checking are also examples of meaningful use. There will be a 90-day reporting period. The program started January 1, 2011 for eligible professionals and October 1, 2010 for hospitals. Payments are determined by October of the following year. Reporting is through attestation in the year 2011, and starting in 2012 there will be a formal electronic reporting process. Payment is delayed at least one year after proving compliance.

In the first phase, physicians will be responsible for electronically capturing health information in coded format. They will also be responsible for using the information to track key clinical conditions and for coordination of care. In addition, clinicians will have to show that they are implementing clinical decision support tools to facilitate disease and medication management. Lastly, they will need to report clinical quality measures and public health information. These are all necessary meaningful use measurements required in the first phase and in 2011.

Barriers to implementation of HIT

In addition to purchase cost, another barrier to EHR implementation is the high initial time costs. Problems that can occur with development of EHR/HIT are a decrease in patient volume during initial setup, cost of transferring data to the EHR/EMR and the time it takes to do so, and errors created by still having paper charts while changing to EHR. Studies confirm that that practice setting and size of the group have significant influence on the adoption of EHRs in the United States.[17] There are several bills that would help physicians finance the establishment of EHR and enhance meaningful use and interoperability of her, including HR 3987, S 3987 and HR 4216, S 1387, which help physicians obtain loans of up to $350,000, but these are still delayed in committees.[10]

Table 1 Medical fee schedule 2011–2016

	First year				
Payment year	2011	2012	2013	2014	2015
2011	$18k	—	—	—	—
2012	$12k	$18k	—	—	—
2013	$8k	$12k	$15k	—	—
2014	$4k	$8k	$12k	$12k	—
2015	$2k	$4k	$8k	$8k	$0
2016	—	$2k	$4k	$4k	$0

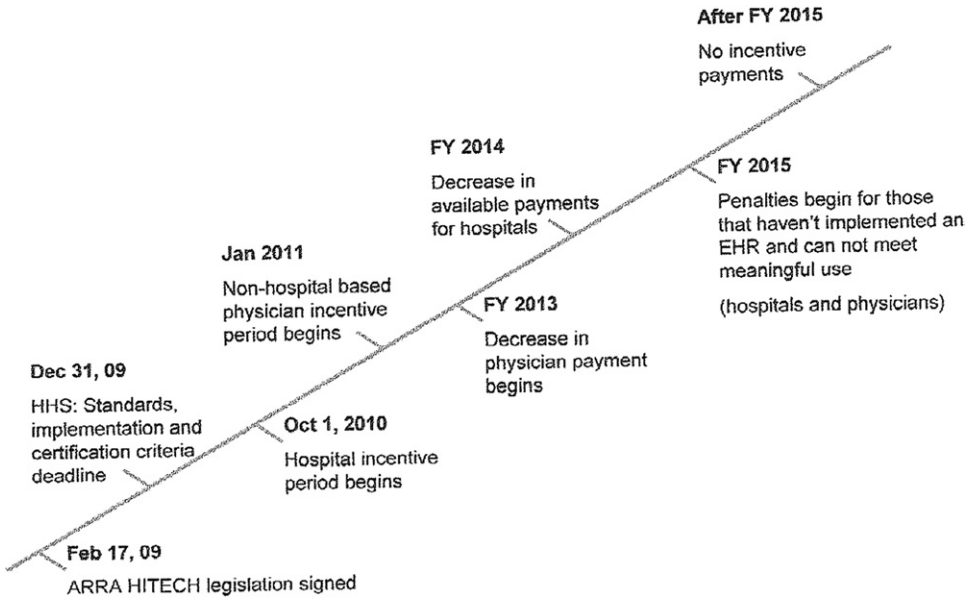

Figure 5 Timeline.

Stakeholders

A major stakeholder is the physician. The initial investment could be as much as $30,000 for a single practice. Physicians who do not adopt/use a certified HIT system would face reduction in their Medicare fee schedule of –1% in 2015, –2% in 2016, and –3% in 2017 and beyond. E-prescribing penalties would occur after 2014 (Fig. 5).[17] ARRA allows HHS to increase penalties beginning in 2019, but penalties cannot top –5%. Exceptions would be made on a case-by-case basis for considerable hardships (e.g., rural areas without adequate Internet access). The American Osteopathic Association and AMA support EHR adoption that provides high-quality care and improves access to patients. The fear is that the physician will front the cost of the EHR, undertake the extensive efforts in achieving meaningful use criteria, and still be denied the incentive payments because of the inability to meet highly complex and unobtainable criteria. Reporting criteria should be more flexible and obtained over a longer period of time. Physicians should be given credit for efforts toward the transition of EMRs and not be penalized.

Stakeholders include patients, EHR companies, physicians, hospitals, government agencies, pharmacies, pharmaceutical companies, and insurance companies. The Healthcare Information and Management Systems Society (HIMSS) Electronic Health Record Association, which represents more than 40 EHR suppliers, support ARRA but have concerns that the timelines are unrealistic and there are too many opportunities to fail because of the extensive number of requirements to meet meaningful use. The patient will benefit from having an EHR that is transportable to other providers more rapidly, and will also have a reduction in possible life-threatening drug interactions, better health care delivery because of evidence-based medicine, and a legible medical record.[11]

There have already been benefits to the patients cared for by physicians who have online practice portals integrated with EHR. Primary care providers manage information, integrate it with biomedical knowledge, and decide with their patients on a course of action (Fig. 6).[18] The EHR can help with better accessibility to patients' records, prescriptions, and medical tests; it can also help speed medication refills, appointment requests, and physician office/hospital registration. The staff will be able to access patients' information more quickly and not spend time searching for charts. Some physicians have the EHR in the examination room and ask their patients to view their own medical records with them, which improves patient communication and quality of care. There is some research that physicians can improve revenue up to $20,000 through improved documentation. Furthermore, medication errors can be reduced.

The vendors of EHR are stakeholders who have come to light recently with the possibility of millions of dollars of federal money available to hospitals for EHR projects. Vendors are not only looking to sell EHR products but also hosting entire businesses through a managed service provider. Medical practices can save thousands of dollars in capital costs by having their networks hosted. The managed service provider acts as an IT department and the network is constantly being monitored and updated with backups. The Certification Commission for Healthcare Information Technology is a volunteer group of physicians in different specialty areas who set standards for EHR and the certification they have set is based on two dozen proposed federal functionality standards for vendors.

Another major stakeholder at the present times is the organization Committee on Operating Rules for Information Exchange (CORE). This group has more than 115 industry stakeholders as of April 2010. These include many of the major health care insurers that provide health care plans to

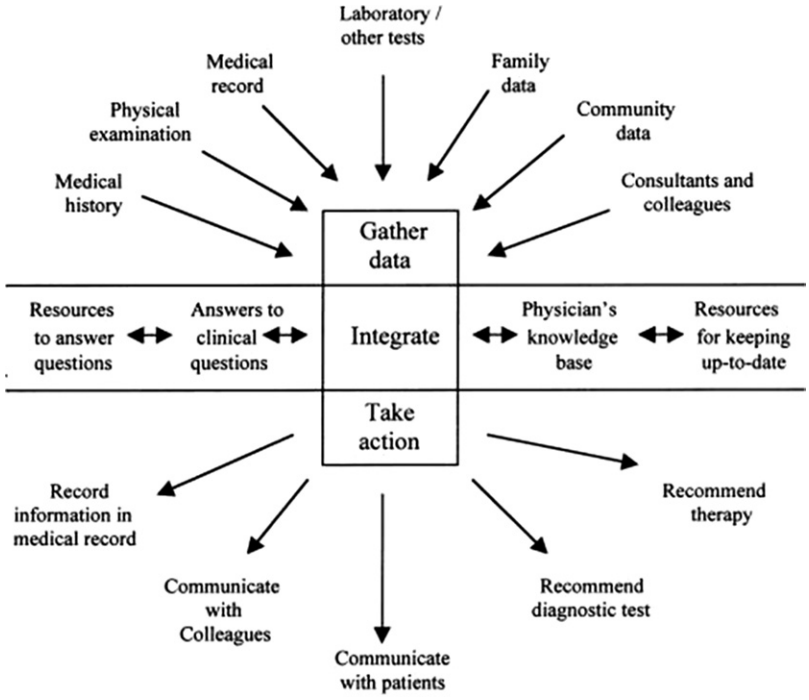

Figure 6 Benefits of EMR.

more than 130 million people; this includes Medicare and Medicaid. Their goals include improving the communication between providers and payers; eligibility, benefits, and claims transactions; and increasing quality time with patients by reducing the administrative functions. CORE is attempting to set standards for the electronic medical portfolios that will ensure confidentiality but improve communication and delivery of information between providers who are working with the same patient.

Recommendations

The AOA and AMA proposed revisions to the CMS rule on meaningful use to ease adoption. These include: eliminating the "all or nothing" approach and requiring that physicians meet five of the 25 proposed objectives and measures instead of *all* 25; eliminating the objectives that do not apply directly to the EHR such as checking insurance eligibility electronically; decreasing the number of quality measure reporting requirements; and allowing physicians to pick only three clinically relevant measures.[19] The meaningful use criteria needs to be revised so that providers will be more likely to adopt EHR, and the time period for criteria reporting needs to be extended for at least two years because most physicians are just beginning to evaluate the process of establishing an EHR.

Public and private policy interventions can effectively counter barriers to EHR adoption in primary care. It is important to secure performance incentives and to reward providers for achieving quality. For example, under the Medicaid criteria, physicians can receive up to $25,000 to offset the cost of acquiring technology in the year-one Medicaid incentive payments; this should be broadened to Medicare also. In a highly positive development, a small but growing amount of purchasers, health plans, and employers are initiating quality-based reimbursement programs, rewarding practices for publishing performance reports, mandating specific quality improvement actions, or using particular IT applications; and they are rewarding consumers for choosing higher-quality providers on the basis of performance reports.[2] CMS should adopt these same criteria and incentives to help promote quality of patient care. We also need to ensure there is interoperability between different EMR systems. To date, there has been no regulation that EHR companies use operating systems that are compatible and able to communicate with competing EHR companies' systems.

The cost of achieving widespread adoption of EMRs in the United States could be high, probably in the tens or hundreds of billions of dollars.[20] The necessary resources in future federal administrations still remains uncertain. The $20 billion from ARRA will help promote the development of HIT, but most of the money has been set aside for educating providers and no money has been set aside to help initiate the cost of setting up the $20,000 to $30,000 EHR systems for providers, who are already looking at a possible 21% cut in Medicare payments as of 2012. Congress needs to ensure that continued funds be assured to primary care providers to better support the technological advances in health care. The incentives through ARRA will come *after* the physician purchases the EHR and with the current recession, access to loans is limited. S.B. 1070 would provide access to private lenders and assist physicians in purchasing EHR.[21,22]

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