Health Information Technology Adoption Among Health Centers: A Digital Divide in the Making?

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OVERVIEW — *This background paper describes the current status of efforts to implement health information technology in community health centers. It summarizes the benefits experienced by health centers that have pioneered the use of information technology and examines the challenges that have hindered wider adoption. The paper identifies a range of policy options that have been considered to promote broader use of information technology by health centers.*

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In recent years, few health policy objectives have received more attention than the imperative to improve the use of information technology in the delivery of health care. In 1999 the Institutes of Medicine highlighted the importance of using information technology to aid in the development of a more systematic, more efficient, safer, and higher quality health care delivery system.[1] Seeking to tap into this potential, President Bush announced major initiatives to promote health information technology (health IT) adoption in 2004.[2] Programs and policies to support health IT are building momentum and beginning to bear fruit.

The health care safety net, which provides care to uninsured and low-income individuals, has been identified as an important target for health IT adoption. Although recent research shows that health IT can improve the care delivered in safety net settings and that dozens of safety net providers were early adopters of health IT, it also shows that the vast majority of health care providers treating underserved populations are unable (though not unwilling) to adopt health IT.

This reality is troubling because disparities in health status and access to care for low-income and minority populations in the United States have been well documented. Low-income and uninsured patients disproportionately lack a "medical home" and are more likely than others to suffer from chronic illnesses. Health IT can facilitate close monitoring of clinical measures for patients with chronic illnesses through disease management programs that have proven effective both in limiting patient morbidity and mortality and in controlling the overall cost to the system. Such technology also creates the potential for collecting, maintaining, and transmitting electronic health patient data to improve coordination across providers and increase the efficiency of care.

Community health centers,[3] authorized for funding under section 330 of the Public Health Service Act, serve as key providers of ambulatory health care for vulnerable populations. The most recent figures available show that federally funded health centers in the United States serve over 14 million patients each year. Financial support for health centers comes primarily from public sources such as federal grants, Medicare, and, most significantly, Medicaid.[4]

Recent research suggests that health IT presents promising opportunities for health centers, as well as many important challenges. Some of these

challenges relate to implementation of health IT generally, but others are specific to the mission of health centers, their patient populations, and the environment in which they operate. This paper reviews the status of health IT implementation by health centers, describes the unique challenges these providers face, explores the experiences of early adopter health centers that have been successful in overcoming these challenges, and discusses the policy issues associated with widespread adoption of health IT among health centers.

THE STATUS OF IT IN HEALTH CENTERS

Like other primary care providers, relatively few health centers have fully integrated health IT into their day-to-day clinical operations. A survey sponsored by the National Association of Community Health Centers and Harvard University found that 8 percent of health centers had started using electronic medical records (EMRs), but well over half would like to use EMRs in the future.[5] (For a list of terms related to health IT applications, see next page.) While variations in definitions of EMR adoption across surveys makes comparisons difficult, the most recent surveys estimate that 15[6] to 24[7] percent of all ambulatory care practices nationally have implemented EMRs. According to one study, about 23 percent reported using some electronic information systems in the process of prescribing or renewing prescriptions in 2005. However the same study estimated that fewer than 6 percent of ambulatory care practices had incorporated e-prescribing systems that allow physicians to directly prescribe drugs with the use of a personal digital assistant or computer terminal.[8]

While only a small minority of health centers have implemented fully developed EMRs, specialized clinical applications like electronic disease registries are more common. Disease registries consist of an electronic database of critical information on selected patients with chronic diseases. Registries both facilitate the care of individual patients by highlighting key measures of clinical processes and outcomes and allow for analyses of provider performance across patients. Most registries are not supported by EMRs; they rely on manual extraction of select data from an existing paper record. A precise estimate of the number of health centers with disease registries is not available. In 2006, the vast majority of health centers (approximately 850) participated in the Health Resources and Services Administration's (HRSA's) Health Disparities Collaboratives program with the use of registries. Experts believe that many other health centers, in addition to those formally participating in the collaboratives, have developed similar clinical databases.

Apart from disease registries, only a small number of health centers have utilized other types of specialized, stand-alone IT tools (such as e-prescribing applications, computerized physician order entry, or other clinical decision support tools). Such capabilities are not typically incorporated into EMR software, but some of the early adopter health centers that have implemented EMRs have also invested in these types of clinical applications.

Health IT Applications: Index of Terms

Product or Functionality	Description
Electronic Health Record (EHR) — or — **Electronic Medical Record** (EMR)	A longitudinal electronic record of patient health information that typically includes patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data, and radiology reports. Although the terms are sometimes used interchangeably, EHR generally refers to a comprehensive record that combines information across multiple providers, whereas EMR is generally restricted to care delivered in a single health care setting.
Practice Management System (PMS)	Part of the medical office record that includes financial, demographic, and nonmedical information about patients, including insurance information. PMSs often track care delivered to individual patients and are able to facilitate the generation of bills going to third-party payers.
e-Prescribing (eRx)	Allows a physician to transmit a prescription electronically to the patient's choice of pharmacy. It also helps physicians and pharmacies obtain information about the patient's eligibility and medication history from drug plans. eRx systems often have built-in alerts for drug-drug, drug-allergy, and drug-disease interactions.
Computerized Physician Order Entry (CPOE)	A computer-based system of ordering medications and other tests. Physicians directly enter orders into a computer system, which can vary in terms of sophistication across sites. Basic CPOE ensures standardized, legible, complete orders, primarily reducing errors due to poor handwriting and ambiguous abbreviations.
Clinical Decision Support (CDS)	Any system designed to improve clinical decision making related to diagnostic or therapeutic processes of care. CDS assists providers with a variety of activities including selecting appropriate medications and dosing schedules, identifying appropriate diagnostic tests, and making differential diagnoses based on patient symptoms. Often incorporated as part of CPOE or EMR/EHR systems.
Master Patient Index (MPI)	A database feature that collects a patient's various provider identification numbers and keeps them under a single, community, or enterprise-wide identification number.
Disease Registry	A database feature that includes key clinical data on a subset of chronically ill patients for the purpose of tracking their condition(s) and managing treatment.

Although clinical applications are not yet in widespread use, health centers have generally embraced IT for administrative purposes. Most large health centers appear to have implemented an electronic practice management system to facilitate patient scheduling, billing, grant reporting, and resource management.[9] Health centers that have invested in EMRs usually integrate these records with administrative systems.

BARRIERS AND CHALLENGES TO HEALTH IT ADOPTION

Low levels of adoption of health IT by the health care industry in general and health centers in particular suggest the presence of barriers and challenges to provider implementation. Experts have long noted that the nature of health care delivery and the complexity of systems for financing health care in the United States have led to lags in the adoption of IT in health care relative to other industries. While health centers face largely the same barriers to health IT as other health care providers, the magnitude of these barriers is, in many ways, amplified by the environment in which health centers operate.

Financing Health IT

The most widely cited obstacle to implementing health IT is the level of funding required to move forward with substantial health IT projects, particularly in the context of limited evidence of return on investment to providers. Research suggests that the initial cost of implementing an EMR in a health center may be as high as $54,000 to $64,000 per participating physician, with ongoing coasts of $21,000 per physician per year.[10]

These cost estimates reflect the significant direct costs of purchasing necessary software and hardware to implement the EMRs, as well as the substantial "soft" costs associated with planning, specifying requirements, customizing and re-customizing systems, training providers, and re-engineering the delivery of health care to accommodate health IT. Because many health centers lack the basic hardware and software infrastructure necessary to begin implementation of the newest forms of health IT, initial costs can be particularly high. Like many community-based, nonprofit organizations, health centers often work with donated computers, use outdated operating systems, and rely on applications that are so old they may no longer be supported by the manufacturer. Also, particularly in rural areas, health centers report having limited options with regard to securing reliable, affordable electronic connectivity to the Internet. Furthermore, the direct costs of developing an EMR are not a one-time expenditure; systems must be maintained and upgraded over time.

When properly implemented, the direct cost of software and hardware are a fraction of the overall cost of health IT adoption. Training providers on the new record-keeping systems, re-designing clinical workflow to maximize the utility of health IT applications, making appropriate use of

health IT once it is implemented, and evaluating and upgrading systems are activities that demand significant time commitments from both clinical and administrative staff. These activities can initially cause a decline in productivity, affecting the health center's operating revenue and access to care for a patient population that is already vulnerable to under-service.

As publicly funded safety net providers, most health centers operate on slim margins and are particularly wary of taking on debt and engaging in activities that could negatively affect their limited revenue streams. Health centers are sometimes torn between being able to maintain the size of the population they serve and being able to implement health IT. Given the financial barriers, health centers that get started down the path of EMR implementation do so largely because they believe it is the "right thing to do" despite the difficulties involved, rather than a necessary step to remain viable as an institution. Many health centers also view EMRs as the "wave of the future" and see electronic records as consistent with their use of disease registries for quality improvement. This use of EMRs is viewed differently than electronic practice management system implementation, which is often seen as a necessary step to keep reporting and billing functions operating smoothly.

Funding for Early Adopters

HRSA's Bureau of Primary Health Care (BPHC) has held the largest pool of federal grant monies directed toward health centers. Most health centers that have successfully adopted health IT will point to BPHC programs such as the Healthy Communities Access Program (HCAP), the Integrated Service Delivery Network (ISDN) program, the Integrated Communications Technology (ICT) and the Shared Integrated Management Information Systems (SIMIS) as important drivers of adoption. Some of these programs focused on EMR implementation (for example, ICT) while others, such as SIMIS, focused on the integration and centralization of practice management systems.

Another very important source of funding has been private foundations that in some cases have supported activities related to health IT implementation on a regional basis. The best example of this is the Community Clinics Initiative (CCI) sponsored by the Tides Foundation and the California Endowment to support health IT adoption among health centers in California. The Tides Foundation has distributed over $47 million in grants to health centers and other safety net providers for infrastructure and training. CCI also provides technical assistance with health IT implementation issues to health centers in California, and other foundations, such as the Robert Wood Johnson Foundation, the Markle Foundation, and the Foundation for eHealth Initiatives, have all undertaken their own efforts to provide guidance and technical assistance to providers interested in implementing health IT.

Some health centers have found creative ways to finance health IT implementation by working with vendors. One example of this is a health center in upstate New York that was able to work with a vendor to design their EMR system. Because the health center served as an "alpha" site and provided valuable feedback that allowed the vendor to complete development of their application, they were provided the software without a direct charge.

Customization Requirements

Health centers have a set of requirements that are substantially different from other ambulatory care providers, significantly increasing the amount of software customization required and, often, the costs associated with implementation. Although customizing "off-the-shelf" applications to meet the specific needs of the provider environment are a common hurdle underlying all health IT implementations, the unique nature of health centers makes the tailoring of clinical systems a particularly complex endeavor.

Because health centers operate as safety net providers, many offer a broad constellation of services to meet the needs of their patients, therefore centers' EMRs must document the provision of these "atypical" services and their associated outcomes. For example, health centers are much more likely than other primary care providers to provide dental care, mental or behavioral health services, and a wide array of supportive services such as translation, health education, and transportation assistance.

Health center IT systems must be geared to the specific needs of health center patients and the clinical model typically used by health centers. For example, health centers are more likely than private practice physicians to participate in programs such as HRSA's Health Disparities Collaborative that attempt to analyze aggregate data across the center's patient population. Therefore, implementation of EMRs must allow for integration with population-specific disease registries that can be used to track services delivered, compliance, and outcomes for a subset of a center's patients. In addition, any clinical decision support features must be adjusted to the needs of providers who are dealing with vulnerable populations with higher rates of teen pregnancy, sexually transmitted diseases, asthma, and other conditions disproportionately experienced by the low-income populations served in health centers.

The interface between the EMR and practice management systems is complicated by the reporting relationships and reimbursement policies that govern health centers. A central administrative task for each section 330–funded health center is the development of Uniform Data System (UDS) reports that are submitted annually to HRSA. These types of standardized reports are generally not required of private sector practices. Elements of UDS reports include:

■ **Patient data.** Health centers must provide a comprehensive summary of patients served, including details on age, sex, race, languages spoken, ethnicity, socio-economic characteristics and insurance status. With the exception of age, sex, and insurance status, these data are not typically addressed in off-the-shelf software.

■ **Services provided and coordinated by the health center.** Centers are required to enumerate all services (health care and non-health care) they are involved with providing and to what extent they are providing the service directly, contracting it out using referrals, or coordinating services that are provided and financed by another source. Again,

few private practice providers engage in such services and, to the extent they do, aggregate reporting on such activities is generally not required. Therefore most commercially available products do not accommodate these concerns.

- **Aggregated data on the volume of services provided.** For selected services (for example, services related to sexually transmitted diseases, chronic care, newborn screenings, etc.), health centers must document the quantity of services provided and the quantity of users receiving that type of service by diagnostic code.

- **Health center finance and administration.** Health centers must report their revenues and costs, broken out by line items specific to nonprofit safety net providers, such as grant-based revenues, revenues from charitable contributions, and costs associated with care for the uninsured.

Current UDS requirements aside, HRSA is moving toward requiring health centers to include performance measurements as part of future UDS reports. Some performance reporting will be required as soon as 2008.

Given that health centers are required to report the data described above annually, it is essential that IT enhancements include a robust reporting function that is able to be customized to meet centers' needs. In addition, because health centers receive grant dollars outside section 330 funds, many will face additional reporting requirements that could be completely distinct from those required under UDS.

In addition to making sure they accommodate reporting requirements, health centers' systems must support billing under state and federal Medicaid reimbursement rules, which differ substantially from Medicare and private insurer reimbursement policies that represent the vast majority of claims for private providers. (Health centers do bill to Medicare and private payers, but Medicaid is their main third-party payer.) Under the Medicare, Medicaid, and SCHIP (State Children's Health Insurance Program) Benefits Improvement and Protection Act of 2000 (BIPA), health centers are reimbursed on a per-encounter basis through a prospective payment system (PPS). This system establishes reimbursement for each health center that is based on the average cost of an encounter in fiscal year 1999 and adjusted annually for inflation. In addition, each state may use additional policies to modify this reimbursement standard that the centers' systems must accommodate. Because of the PPS used by each state Medicaid program, improvements in service coding by health centers do not typically lead to enhanced reimbursement, one of the benefits commonly ascribed to the use of EMRs in private practice settings. Financial beneficiaries of EMRs in health centers tend to be downstream providers, like hospitals and Medicaid managed care plans. For example, information from EMRs can reduce the need for diagnostic testing during an emergency room visit or inpatient stay, saving reimbursement costs for the managed care plan when patients are insured through Medicaid and minimizing uncompensated care the hospital when patients are uninsured.

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Securing Technical Expertise

Most health centers lack the in-house expertise needed to successfully implement clinical health IT systems, and many lack the funding to hire objective consultants to guide them through the broad range of technical decisions that must be made. Health centers just beginning to review available products and services often find that vendors offer a range of products of varying quality. Having a solid grasp of what kind of system they are looking for, having a set of core criteria for selection, and understanding how to evaluate options can significantly expedite this process, but it also requires a fairly high level of technical sophistication. Absent the resources to hire an executive-level chief information officer or the good fortune of having especially astute IT staff, health center administrative and clinical leadership often find vendor relationships difficult to navigate.

In the design and customization phase, vendors typically offer their own staff as consultants to develop and implement design specifications. While making use of these services is often necessary, the guidance offered by vendor-based experts may not adequately serve the particular needs and interests of the health center.

Health centers also find that the vendor market is still maturing and remains fragmented. Most EMR vendors selling products appropriate for health centers serve a small number of ambulatory care customers. As the market solidifies, health center–focused vendors are sometimes involved in mergers and acquisitions. In such instances, health centers may experience problems when their vendor is purchased by another company or discontinues support for the product or version they are using.

BENEFITS OF HEALTH IT

Despite these challenges, some early adopter health centers have partially or completely overcome these barriers. Such health centers commonly benefited from strong clinical or managerial leadership to garner support and identify resources for IT investment. These leaders have typically been proactive in securing funding outside traditional revenue streams from public and private sources. In many cases, the leaders worked to establish collaborative relationships with other health centers to achieve the economy of scale needed to make IT investments financially feasible.

Health centers that have implemented a broad range of IT applications emphasize the potential for these tools in improving both quality of care and operational efficiencies. A study of six health centers with EMRs in six states found "net financial losses from EMR use, as a result of high initial and ongoing EMR costs and limited financial benefits. Yet most CHCs also launched EMR-enabled QI [quality improvement] gains…EMRs in CHCs were a clear value to patient and payer stakeholders, since patients received better care, and payers likely reaped some EMR-related downstream benefits in avoided specialist, emergency room (ER), and hospital spending—at no added cost to them."[11]

Though largely based on anecdotal accounts, a study of health centers' IT practices funded by the U.S. Department of Health and Human Services' Office of the Assistant Secretary for Planning and Evaluation reveals many of the ways health IT can contribute to improvements in quality and efficiency.[12]

Structural and process improvements — Health centers report important improvements in processes for patient care after EMR implementation. They note that electronic patient charts are far more legible than handwritten notes, reducing the potential for error. They also have observed improved medication management, greater accessibility of lab records, and improvements in compliance with guidelines for screening and routine patient follow-ups. EMR systems with a tracking component have improved outcomes for some health centers by systematically prompting follow-up for patients with chronic illness or patients indicated for diagnostic screening. Health centers also note improvements in reducing unsafe use of medications and in the efficiency of identifying patients whose prescriptions need to be recalled after issuance of warnings by the Food and Drug Administration.

Clinical outcomes improvements — Although health centers that are early in their implementation of EMR are hesitant to point to concrete clinical improvements before formal evaluation, some have observed positive changes in treatment outcomes. For example, one Boston health center cited that after six months of reports and tracking of the diabetic population through their EMR, the average HbA1c measures decreased from 8.6 to 8.01, and the patients' blood pressures markedly improved. A Florida health center described a similar experience during the months following EMR implementation.

Efficiency and productivity — Increased clinical efficiency and provider productivity are frequently cited as benefits of EMR. Some health centers report that the piles of paper records that once cluttered clinicians' desks have been eliminated, making workflow more efficient. Transcription costs are also eliminated in some EMR-adopting health centers, and some centers have cited efficiencies in obtaining records electronically compared with pulling hard copies of charts. Although productivity does slow down during initial implementation (which lasts two to six months), most centers reported that as providers gain familiarity with the systems, they began to see similar numbers of patients as before implementation and, in some cases, the throughput of patients increased.

Access to data and system stability — Both clinical and administrative documentation were reported to have improved

Health IT and Care Delivery

Anecdotal accounts suggest that the use of IT can help health centers fulfill their missions and achieve their objectives more efficiently and with higher quality outcomes.

Health Center Objectives

— Provide access to the uninsured

— Deliver evidence-based care

— Actively manage chronic illnesses

— Improve patient safety

— Improve care coordination

— Maximize third-party reimbursement

— Report to funding agencies

— Reduce administrative costs

Activities Enabled by Health IT

— Track eligibility for Medicaid

— Track care delivered and outcomes

— Generate reminders at point of care

— Prescribe drugs electronically with built-in formulary data and interaction warnings

— Automate patient follow-up

— Access patient records online

— Bill electronically

— Generate custom reports

dramatically with EMR use. Many health centers agree that EMR use has improved the content of their medical records and the accessibility of reliable patient information. The systems allow each provider at a health center, or all health centers in a network, to generate reports assessing the progress of patients diagnosed with chronic conditions.

Links with hospitals and laboratories — EMR-facilitated electronic linkages with labs and hospitals have proven valuable to health centers. Where implemented, these linkages have enhanced coordination of care between hospitals and health centers and have increased the availability of patient information.

CREATING INCENTIVES

Health centers that have successfully implemented health IT have demonstrated that these investments can lead to improvements in the effectiveness of health care delivery. Bringing these innovations to scale may necessitate policy changes in order to catalyze widespread adoption across health centers. One estimate places the financial investment needed to pay for the capital, training, and maintenance costs associated with EMRs in all health centers at $55 to $110 million per year over a ten-year period.[13] The following discussion summarizes some of the policy proposals that have been made to further the development of health IT within health centers.

To date, most health centers that have adopted health IT have benefited from the presence of dedicated private and public grant programs that have funded their initial investments. From a policy perspective, these grant programs have represented the primary mechanism for encouraging health IT adoption among community-based safety net providers generally and health centers in particular.

At present there is limited direct federal grant funding to support IT in health centers. Appropriations for programs like HRSA's ISDI, SIMIS, and HCAP have ended, and HRSA's Health Center Controlled Network program, which served as a continuing source of funding for several successful networks, concludes at the end of fiscal year 2007. Some new opportunities for funding via HRSA's Office of Health Information Technology (OHIT) have been announced this past spring, including approximately 8 grants to go to health centers or networks seeking to implement EMRs and 12 smaller grants for the planning of EMR implementation. However, these programs are intended as "seed money" to get health centers started with health IT adoption, assuming that, over time, health IT should be self sustaining at the health center or network level.

The Agency for Healthcare Research and Quality (AHRQ) continues to fund health IT implementation projects, most recently as part of a set of Ambulatory Safety and Quality grants focused on using health IT for quality improvement, quality measurement, and improvements in patient-centered care to be awarded in fiscal year 2007.

Absent an aggressive revitalization of these or similar programs, it is unlikely that federal grants alone will drive health IT adoption for all health centers. Grants have typically benefited a small percentage of the total number of health centers and are more likely to go to those health centers and networks that are already established and have the resources and expertise to develop strong proposals. In light of this reality, policymakers have considered a variety of other strategies to create longer-term structural support for health IT and to reward health center investment in it.

Federal Leadership and Technical Assistance

Federal efforts have increasingly focused on providing access to technical assistance through in-person resources, Web sites, and portals that allow for peer-to-peer collaboration and support. In 2006, HRSA created OHIT and charged it broadly with assisting HRSA-supported providers in health IT adoption. The office currently manages the remaining health center network grants, as well as the agency's telehealth program.

Beginning in fiscal year 2007, OHIT began development of an online toolbox for health IT implementation specific to health centers as well as a technical assistance center. The goal is to work toward a standardized, centralized set of resources that can be accessed across bureaus and grantees to support health IT adoption. It is envisioned that the technical assistance center would leverage and supplement existing HRSA technical assistance programs that relate to health IT and provide assistance at multiple levels, including direct assistance to providers through use of consultants, teleconferences, provision of online resources, and learning programs for HRSA staff and grantees. Some primary care associations have also begun supporting health centers around health IT adoption.

Although technical assistance can help grantees learn about health IT and work through difficult situations, such support does not obviate funding needs. In order to foster adoption more broadly, most health centers will need to find alternative sources of funding. Toward this end, OHIT has placed priority on working with other federal agencies, including AHRQ, the National Institutes of Health, the Substance Abuse and Mental Health Services Administration, the Centers for Medicare & Medicaid Services (CMS), the Centers for Disease Control and Prevention, and the Office of the National Coordinator for Health Information Technology, in order to raise awareness of the importance of health IT for safety net providers. In addition, OHIT is reaching out to foundations and other organizations, including the National Governor's Association, the National Council of State Legislatures, the Association of State and Territorial Health Officials, and the National Association of City and County Health Officials, to identify opportunities to include safety net providers in their health IT agendas. Finally, health centers have been considered in pending legislation as appropriate targets for additional grants in the health IT arena.

Innovative Financing Options

Because direct federal grant funding is not widely viewed as a viable financing mechanism for the broad implementation of health IT throughout health centers, a variety of alternative financing mechanisms have been piloted or proposed. These funding approaches are perceived to be more politically realistic and sustainable, as they do not depend on annual appropriations, but their utility for health centers remains largely untested.

Medicaid initiatives — Although still in their early stages, recent Medicaid initiatives are a potential source of funding for health center IT investment. As part of the Deficit Reduction Act of 2005 (DRA), CMS has funded $75 million in Medicaid Transformation Grants to help states modernize Medicaid programs. Several grantee states have focused on health IT implementation and health information exchange (HIE). Some state legislatures have allocated funds to assist in creating a statewide HIE, which may result in resources for health centers.

Other states have facilitated IT development efforts through Medicaid waivers, securing federal matching dollars in the process. For example, during the 2005 legislative session, the Iowa General Assembly adopted House File 841 allowing the IowaCare Medicaid Reform Act, which granted authority for the state to implement a section 1115 waiver. Among the provisions of the act is to use some portion of state and federal Medicaid funds to expand use of EMR by Medicaid providers, focusing initially on Medicaid recipients whose quality of care would be significantly enhanced by the availability of EMR. While it is unclear what, if any, direct assistance will come to health centers under these and similar state programs, there is an indication that states are looking for innovative ways to fund health IT for safety net providers.

Loans — Several observers have noted the potential for health centers to access low-interest loans to facilitate health IT implementation. In general, health centers do have some advantages over private providers with respect to securing loans from government agencies and public-private development corporations. For example, HRSA provides health centers with access to loan guarantees to help health centers secure loans to pay for IT purchases. Public-private development corporations such as New York City's Primary Care Development Corporation and the National Cooperative Bank Development Corporation, which operates in California, New York and other areas, also serve as a potential source of loans. There has been increased interest among community development loan corporations to support safety net health care providers making investments in infrastructure, including IT. Often these programs are developed in conjunction with local primary care associations (PCAs) to meet the specific needs of health centers. Despite the availability of loans with favorable terms, however, some health centers indicated a reluctance to use debt financing to fund health IT in the absence of an expectation that such investments would lead to increased revenues.

States are looking for innovative ways to fund health IT for safety net providers.

Pay for performance— Many observers anticipate that the largest public and private payers will adopt reimbursement policies that will reward use of health IT in order to improve health care quality and reduce costs. These policies, commonly called "pay for performance" (P4P) incentives, come in two forms. One advocates for the use of payments simply for the use of the health IT, whereas the other reserves higher payments for providers that are able to report evidence of higher quality care. To date, private sector P4P programs predominantly use the latter strategy: providers are rewarded through bonus payments if quality metrics are met.

P4P innovations taking place in the employer and Medicare markets will not substantially affect health centers directly. To date, there are only limited examples of P4P use among Medicaid payers. The National Association of Community Health Centers has recently initiated a study of Medicaid P4P activities, and the results from that project are pending. Some analysts believe that it is unlikely that P4P would be broadly adopted by states for Medicaid until Medicare and private health plans embrace P4P more universally. Although states have the latitude to adopt P4P at their discretion, in general Medicaid managed care plans have not moved in this direction. However, if implemented under Medicaid, P4P could result in incentives to encourage health center adoption of health IT.

Medicaid scope of service adjustments — Medicaid payments represent the single largest source of revenue for health centers, and Medicaid reimbursement policies have an effect on the type and intensity of services typically provided by health centers. While Medicaid reimbursement cannot provide resources to support up-front costs associated with health IT implementation, federal funds may be used to recoup some costs retrospectively or support ongoing maintenance costs as part of a scope of services adjustment to payment. Under the BIPA legislation that authorized the current PPS structure for reimbursement, health centers are paid a single, fixed rate for each patient care visit they provide, based on their costs in the baseline year with updates for inflation. States are charged with defining processes for health centers to apply for scope of services adjustments to modify payment levels when health centers can show that they provide new services not supplied previously and therefore not represented in baseline payment levels.

Some analysts studying the potential for supporting the cost of health IT have identified scope of service adjustments as a mechanism that health centers might use to secure reimbursement for health IT investment. However, the U.S. Government Accountability Office indicated that, in 2005, half of the states using cost-based reimbursement for health centers had not specified processes for health centers to use in applying for scope of service adjustments or had not provided guidance on what constitutes a scope change.[14]

A study of the 24 states that had specifically defined what constitutes a scope of service adjustment in 2005 showed that their definitions varied broadly. Some definitions were limited to changes in the type, intensity, or length of services; others encompassed additional areas, including use of

If implemented under Medicaid, P4P incentives could encourage health center adoption of health IT.

new technology.[15] Efforts to implement scope of service adjustments under current Medicaid rules to defray ongoing costs of health IT implementation have been attempted in states such as California and Oregon, but these efforts require significant expertise and resources for working through application and legal issues with state Medicaid agencies and have not been effective to date. In some cases, health center networks and PCAs have been able to tackle these issues. The success of these initiatives will vary depending on the environment in a particular state and the extent to which health center stakeholders become more familiar with the rules for seeking scope of service adjustments to Medicaid PPS payments.

CONCLUSION

Although adoption of health IT among federally funded health centers has been relatively slow, early research demonstrates the synergy between the promise of health IT and the mission of health centers. Examples of early adopters show that health centers, with their focus on high-quality, comprehensive care, can serve as useful pilots for health IT implementation. Improvements in quality and efficiency of health center care using health IT could help achieve two important objectives: (i) improving health care outcomes for vulnerable populations, thereby reducing health disparities, and (ii) decreasing overall system costs associated with caring for low-income populations.

Achieving such goals may necessitate policy interventions. To date, an important enabler of health IT adoption among health centers has been the availability of federal grant dollars. In some cases, federal funds have been supplemented by valuable technical assistance resources. While some health centers have developed innovative local initiatives to support health IT adoption, health center leaders emphasize the need for dedicated federal funding to maintain and build on their accomplishments. In light of existing constraints on discretionary spending, it is unlikely that health centers will be able to rely solely on dedicated federal grant dollars to fuel health IT investment. Although health centers face many of the same challenges that have hampered health IT development by other primary care providers, a number of health centers have had to take on a leadership role to move health IT forward. In order to sustain and expand these efforts over time, policy changes relating to traditional health center revenue streams may need to be considered.

ENDNOTES

1.   Institute of Medicine (IOM), *To Err Is Human: Building a Safer Health System,* National Academy of Sciences, 2000.

2.   The White House, "Transforming Healthcare: The President's Health Information Technology Plan," chap. 3 of *A New Generation of American Innovation*, April 2004; available at www.whitehouse.gov/infocus/technology/economic_policy200404/chap3.html.

Endnotes / continued

3.   For more information on community health centers, see Jessamy Taylor, "The Fundamentals of Community Health Centers," National Health Policy Forum, Background Paper, August 31, 2004; available at www.nhpf.org/pdfs_bp/BP_CHC_08-31-04.pdf.

4.   IOM, *America's Health Care Safety Net: Intact but Endangered,* National Academy of Sciences, 2000.

5.   National Association of Community Health Centers, "Electronic Health Information among Community Health Centers: Adoption and Barriers," fact sheet, May 2006; available at www.nachc.org/research/files/CHC%20HIT%20survey%20fact%20sheet.pdf.

6.   David Gans *et al.*, "Medical Groups' Adoption of Electronic Health Records and Information Systems," *Health Affairs*, 24, no. 5 (September/October 2005): pp. 1323–1333.

7.   Ashish K. Jha *et al.*, "How Common Are Electronic Health Records in the United States? A Summary of the Evidence," *Health Affairs,* Web Exclusives, 25, no. 6 (October 2006): pp. w496–w507.

8.   Gans *et al.*, "Medical Groups' Adoption."

9.   D. Gaylin *et al.*, *Community Health Center Information Systems Assessment: Issues and Opportunities. Final Report,* October 2005; available at http://aspe.hhs.gov/sp/chc/chc.pdf.

10. Robert H. Miller and Christopher E. West, "The Value of Electronic Health Records in Community Health Centers: Policy Implications," *Health Affairs*, 26, no. 1 (January/Februrary 2007): pp. 206–214; and Kevin Fiscella and H. Jack Geiger, "Health Information Technology and Quality Improvement for Community Health Centers," *Health Affairs*, 25, no. 2 (March/April 2006): pp. 405–412.

11. Miller and West, "The Value of Electronic Health Records," p. 211.

12. Gaylin *et al., Community Health Center Information Systems Assessment.*

13. Miller and West, "The Value of Electronic Health Records," p. 212.

14. U.S. Government Accountability Office (GAO), *Health Centers and Rural Clinics: State and Federal Implementation Issues for Medicaid's New Payment System*, GAO-05-452, June 17, 2005; available at www.gao.gov/new.items/d05452.pdf.

15. Sara Wilensky and Roger J. Schwartz, "Update on the status of the Medicaid Prospective Payment System in the States," National Association of Community Health Centers, State Policy Report #6, August 2005; available at www.nachc.com/advocacy/Files/statepolicyreport6.pdf.