Policy and System Strategies in Promoting Child Health Information Systems, Including the Role of Medicaid, the State Children’s Health Insurance Program, and Public Financing

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ABSTRACT

Government, through its unique roles as regulator, purchaser, provider, and facilitator, has an opportunity and an obligation to play a major role in accelerating the implementation of electronic health record systems and electronic health information exchange. Providers, who are expected to deliver appropriate care at designated locations at an appropriate cost, are dependent on health information technology for efficient effective health care. As state and federal governments move forward with health care purchasing reforms, they must take the opportunity to leverage policy and structure and to align incentives that enhance the potential for provider engagement in electronic health record adoption. Pediatrics 2009;123:S111–S115

MORE THAN AT any time in the past, there is now an urgent need to press forward with the deployment of information technology (IT) in support of quality care for children of this country. As the passage of the Social Security Act establishing Medicare and Medicaid, and the implementation of these programs, affected larger social issues, the design of government health care support systems for children can drive the development of electronic health record (EHR) systems in both the public and private sectors. Medicaid pays for up to 50% of births and the costs of health care of more than 1 in 4 children. Therefore, it is critical that EHR systems are designed and implemented in a way that creates administrative efficiencies for both the public purchaser and the provider community and accommodates the clinical and administrative needs of the populations served by Medicaid, State Children’s Health Insurance Program (SCHIP), and other publicly funded programs, particularly those for children.

Government has an opportunity and an obligation to play a major role in accelerating the implementation of EHR systems and electronic health information exchange and ensuring a focus on IT needs specific to the care of children. Government has the unique advantage of serving in 4 major roles at both the state and federal levels (ie, regulator, purchaser, provider, and facilitator) and functions as a powerful motivator for widespread adoption of health IT (HIT).

Providers are expected to deliver appropriate care, at designated locations, at an appropriate cost. It is no longer tenable to think that this will be accomplished without HIT for the redesigned system, coupled with transformational change in the administration of health care services. As state and federal governments move forward with health care purchasing reforms, they must take the opportunity to leverage policy and structure and to align incentives that enhance the potential for provider engagement in EHR adoption.

HEALTH CARE IT CHASM

Health care organizations, insurance companies, providers, and purchasers are cognizant of the needs of the patients they serve and are making capital investments in clinical information systems. These systems are costly, however, and implementation is difficult. There is a need to prove that the time required to coordinate the implementation of electronic medical records is worth the effort, in terms of patient outcomes and provider efficiency.

The government has begun to respond to these issues. The federal government has made changes in the Medicare program in substantive ways by recognizing the increasing role played by pharmaceutical therapy. The technology partnership limitations posed by Stark legislation, which presently precludes hospitals from paying for technological advances in physicians’ offices and clinics, are undergoing changes. The Agency for Healthcare Research and Quality, the National Library of Medicine, the Center for Medicare and Medicaid Services, the National Health Information Infrastructure, and other groups are investing significant funds in a coordinated effort to address the limitations to medical advancement posed by an inadequate information infrastructure. Public and private health care purchasers
are integrating pay-for-performance incentive plans with the deployment of IT in ambulatory practice settings. Indeed, a survey of ambulatory care physicians in Florida found that 23% of child health care providers (defined as family physicians, primary care pediatricians, and pediatric subspecialists) reported that their use of clinical IT was a minor factor in determining their compensation. Finally, several coalitions are exploring ways to create an information infrastructure that is more valuable to patients and clinicians, through initiatives such as EmpowerRx, which was developed by Gold Standard in partnership with the Florida Medicaid system to facilitate the flow of real-time information on prescribed medications and drug screening among providers.

The challenges to sharing patient data among health care entities are complex. More often than not, hospitals and hospital systems operate on different IT systems, which are different from the systems used in physician offices, clinics, and pharmacies. Coordinating efforts across health care entities is difficult because, in many such health care transformation efforts, total financial costs are underestimated, the degree of change required by every participant is not appreciated, time requirements are underestimated, productivity loss is not appreciated or addressed sufficiently, and coordination and communication among providers are not adequate.

**ROLES OF GOVERNMENT IN ENSURING RAPID IMPLEMENTATION OF HIT FOR CHILDREN**

**Roles**

As noted above, state and federal governmental leaders have 4 distinct roles in the design and development of EHR systems and therefore 4 opportunities to prevent unintended barriers, while simultaneously encouraging the purchase of appropriate EHR systems and applications that address the care of children, as well as adults. State and federal governmental entities are the regulators through legal requirements, they become providers through their public health, rural health, or veterans’ facilities, they serve as the purchasers of health care services for the largest and potentially neediest of populations, and often they take on the role of facilitators. Each of these roles can serve to facilitate the quick implementation of new health information-related standards. The cumulative effect that government can have by working synergistically in all of these roles is extremely powerful.

**Regulator**

Health care is very personal, and consumers are concerned with privacy, confidentiality, and security. The government has regulatory responsibility to address these issues so that EHR system initiatives can move forward. Providers are concerned with liability issues, both for using and for not using EHR systems and HIT tools once they exist. Inherent in the ability to address issues and to implement EHR systems reliably is the need to propose standards for data terminology, transaction language, technical interoperability, and architectural infrastructure, as well as to provide ongoing oversight through mechanisms such as licensure and administrative structures. These issues should be addressed through 1 of 3 mechanisms, that is, state or federal regulations, federal or state law, or public purchasing contractual requirements. They can be addressed through legislation and regulation and through Medicaid/SCHIP managed-care contracts and fee-for-service participation, coverage, and payment requirements.

**Provider**

When government serves in the role of a provider of health care, it must participate in the development and communication of the plan and strategies for information and data exchange. Statewide policies and sharing of best practices among states help ensure uniformity of approach and deployment. Safety-net providers must benefit from the flow of information to prevent leaving the most vulnerable populations outside the evolving system.

Capital expenditures and ongoing operational costs for local public health entities, state and county hospitals, and public mental health clinics are factors in implementation. Public providers are in the same predicament as private providers, in that they need to know when to purchase which products. Therefore, government has an incentive to ensure that the marketplace provides offerings that meet the needs of the wide range of public and private providers, from single-practitioner offices to vast health care systems. In addition, because government has a public health oversight role, it needs to seek a design that can address biosurveillance, bioterrorism concerns, disease outbreak tracing, and connectivity between public health and primary care doctors. These capabilities could provide operational benefits, such as reduction of paper burdens, the ability to identify where a medical error occurred, and the ability to generate reports for the patient’s medical home or referring physician.

Well-planned and thoughtful development of HIT can support public health emergencies, as well as providing a crucial tool for detecting and responding to naturally occurring or intentional disease outbreaks. With the means for quick exchanges of data among providers and public health agencies, all parties benefit, especially the patients. As the Government Accountability Office reported, “IT can play an essential role in supporting federal, state, local and tribal governments in public health preparedness and response.”

Early successes will be important to engage public providers who are already doing much with little. Electronic prescribing, integration of registries, and links between hospitals, public health clinics, home health providers, home sites of individuals with disabilities, and mothers of newborns bring immediate benefits to the system. IT support can do much to improve the efficiency and effectiveness of staff members charged with the administration of these programs.

**Purchaser**

The complexity and costs of delivering health care to Medicaid/SCHIP/publicly covered individuals are enor-
mous; however, this funding positions state and federal governments to use their role as purchaser to engage and to motivate providers to accept and to use HIT. Providing incentives that minimize the administrative burdens for the provider and decrease administrative costs passed on to the purchaser can benefit everyone.

The collaboration between the Centers for Disease Control and Prevention and the Center for Medicare and Medicaid Services and the redefining of what is an allowable expenditure under the Medicaid Management Information System have created an opportunity for statewide immunization registries. Solutions were created that addressed authentication, privacy, security, and confidentiality to make these registries more user-friendly. To justify the initial costs and to make the system compatible with public health and private provider operations, the immunization registry designed and implemented in Wisconsin was adopted by other states, as a low-risk, affordable, and sustainable option.

Medicaid financing, rural health clinic grants, public heath grants, and mental health appropriations provide a positive potential mechanism for public sector payment. Medicaid financing can be used through appropriate fee-for-service and managed-care organization payments that accommodate operational costs of IT and management, expanded coverage such as payment for e-mail exchanges between providers and patients, and provider alignment of incentives through public recognition and other direct and indirect financial rewards, expanded use of the External Quality Review Organization authority and provider relations activities to provide oversight, training, and tools and to encourage interoperability and connectivity, and maximization of the Medicaid Information Technology Architecture framework.5

The Center for Medicare and Medicaid Services-sponsored Medicaid Information Technology Architecture Initiative, which aligns with the goals of the Nationwide Health Information Infrastructure and the Strategic Framework from the Office of the National Coordinator for Health Information Technology, could potentially allow a physician’s EHR system to connect to the Medicaid purchaser to validate his or her eligibility and to allow a physician’s EHR system to connect to the Medicaid Management Information System funding through the evolution of the Medicaid Information Technology Architecture initiative and framework.3

Facilitator

Quality integrated health care is more a journey than a set destination. The first actions in a journey are to build an incremental plan with enough flexibility to accommodate difficulties, to work toward consensus on a framework to guide priority-setting throughout the journey, and then to develop those systems that drive toward quality, aligning with other efforts where possible. Medicaid/SCHIP government leaders retain the role of facilitators, neutral parties who can bring public and private efforts together to move a community, state, or region forward on that journey. It is this key role in an issue significant to citizens, providers, and purchasers that can ensure the engagement and deployment of all stakeholders in the determination of governance, logistics, and financing of EHR systems from initial feasibility to ongoing sustainability.

The movement to EHR systems must involve sharing data, not controlling data. National standards are a critical infrastructure support to sharing data. Communicating findings, translating them into the local environment, and promoting national initiatives at the local level to provide consistent information, based on validated data and using evidence-based performance measures, should be a clear goal of state governments as facilitators. Momentum can and must be maintained through simply moving forward and not letting the perfect be the enemy of the good.

ROLES OF PHYSICIANS IN HELPING ENSURE RAPID IMPLEMENTATION OF HIT FOR CHILDREN

Current Situation

The medical profession has been slow to embrace the information age, for many reasons. Although health care as a business has lagged far behind other large sectors of the economy in the adoption of IT to support quality, efficiency, reliability, and service, we may be approaching the tipping point. Findings from annual surveys conducted by the American Academy of Family Physicians showed that up to 40% of family physicians are now using EHRs. Although e-mail seems to have become as common as cellular telephones, few physicians routinely communicate with patients or parents via the Internet.7

The reasons for this situation can be categorized generally into 3 groups, that is, cultural/professional, financial, and technological. Understanding the reasons and identifying some potential political and policy options to accelerate the adoption of HIT for the care of children and, indeed for all in the United States, are critical for action to occur.

Cultural/Professional Considerations

The nature of the profession of medicine is to be cautious regarding change, because the stakes are high. Risky changes could possibly harm patients. Procedures and treatments that have seemed to be safe, even if not necessarily effective, tend to persist in practice. The perception of individual clinicians is that quality care is the result of good training, lifelong learning, and hard work. It is within this milieu that the introduction of EHRs and office system changes to improve quality, efficiency, reliability, and service must occur. Change is difficult in most situations, but it is even more so in the practice environment of typical primary care physicians. They are extremely busy with minute-to-minute clinical responsibilities and often view their own role as limited to the doctor-patient interaction. The management of office functions and flow is another’s responsibility. The
full potential of teamwork is seldom realized because of problems in training and trust and the fact that responsibility for error is placed squarely on the physician.

The solution lies in bringing reliable systems and EHRs to physicians’ offices. Physicians must be helped to see that current methods do not yield high performance. One of the most powerful motivators in changing physician behavior is to show data from the physician’s own practice. Such data are far more compelling than data from an outside source.

Financial Considerations

Much has been written about the fundamental faults of the physician payment system in the United States. In general, the dominant mode of payment is fee for service, which tends to drive service volume without adequate attention to the necessity for or the quality of that care. Within the structure of the payment system, primary care physicians are relatively disadvantaged, in that there is inadequate value placed on the complexity and costs of care coordination and chronic disease management. The result is that these practices operate with a very narrow margin and have little tolerance for large capital investments. For the same reasons, the physician owners of practices are very reluctant to invest in technology that could reduce productivity or fail to yield a positive return on investment.

It is difficult to estimate the financial risks related to implementing EHRs, but the perception of physicians is that the risk is very high. With 250 separate systems to choose from, instability in the market that has led to failure of a number of vendors, and the lack of interoperability standards, physicians are properly reticent. The work of the Certification Commission for Health Information Technology should help to alleviate some of these fears, but not all.

The true costs of implementing EHR systems are not limited to hardware, software, and training. A total change of the structure and function of the office is required, with the EHR serving as a platform for redesign and not merely an end in itself. Many physicians are reluctant to begin this work simply because they do not know where to start.

Technological Considerations

The relatively slow pace of progress in EHR development over the past 10 years has been attributable in part to a lack of a dependable market for these products. The costs of systems, once prohibitive for primary care physicians, have become much more reasonable, with significant reductions in hardware and data storage devices. Lower costs also have been created by the option of the application service provider model.

Technological barriers to HIT adoption have been related to 4 main factors, that is, affordability, compatibility, interoperability, and data stewardship concerns. Affordability relates to the overall cost of hardware, software, training, and implementation. Compatibility involves open standards for devices and add-on components (eg, so that any printer works and not just a printer from the same vendor).

Interoperability is often misunderstood. The real need is for disparate systems to be able to share packets of critical clinical data that are standardized and readable by all other systems. It does not mean that every computer system must be able to interact with every other computer system in a full-time, real-time, fully interactive way. The Continuity of Care Record is an example of a clinical data exchange standard that can support the needed data exchange in XML format. Systems also must support individual personal health records that are portable.

The work, skill, and time required to enter data into some systems has led many physicians to wait for the day when voice recognition will allow all interactions with the computer to be voice-activated. Others have waited for the software to address such critical issues as workflow and decision support. Many have just waited.

A concerted effort on the part of government, commercial payers, vendors, and employers is required to promote the use of EHR systems and to create the best possible environment for implementation and use of IT. Specific application of HIT to the care of children must be addressed with the broader needs for all ambulatory care. EHR systems must support functions that are particular to the care of children, such as developmental screening, immunization reminders, growth charts, and medication dosing related to age, weight, and kidney function, as part of the overall infrastructure.

DISCUSSION

The Institute of Medicine has called for the creation of a public-private partnership in the form of an organization to coordinate the nation’s health quality agenda and to set standards for performance measurement and reporting. The National Quality Forum is undergoing a transformation that will position that organization to take on the functions called for in the Institute of Medicine report.

Addressing liability, privacy, confidentiality, and security is critical for success, especially in child-specific areas. Reviewing current authority and limitations is a first step in leveraging proven best practices, encapsulating privacy, and ensuring security. Reviewing and incorporating national standards for data terminology, transaction language, technical interoperability, and architectural infrastructure, as well as providing the governmental infrastructure for ongoing oversight, would enhance the probability of a sustainable effort.

Encouraging the use of proven reusable tools and technologies by private and public providers and purchasers is key to ensuring that transformation is aligned with organizational ability to manage change. Federal and state agencies should participate in and proportionately finance local or regional pilot programs that activate national standards at the local level, to ensure that population-specific issues are addressed.

Understanding that system capabilities can facilitate growth, flexibility, and sustainability is an important first step. Creating and maintaining momentum through review and use of various public and private funding mechanisms for capital expenditures and ongoing oper-
ations is a critical strategy. This includes providing ongoing education, training, and support, at the consumer, provider, and government levels.

Enhancing ongoing communication through partnerships would improve the likelihood that the health care vision, marketplace environment, and health care service delivery capabilities remain coordinated and consistent. Sponsoring, facilitating, and engaging in meetings and workshops should be a priority. An important point would be to ensure that all stakeholders are engaged, particularly those who know and understand the needs and gaps in the care of children.

Implementing policies and incentives that move physicians and providers toward a common set of performance measures would provide a data set for practice-level performance assessments and allow for comparisons among varying systems of care. It is imperative that the data collection burden is held to a minimum and, ideally, that the data are produced prospectively as a byproduct of the processes of care. This requires that a common set of measures, with precise specifications, be published before data collection begins.

Ensuring that policies serve to standardize, to harmonize, and to certify the functions of EHR systems, as well as to promote interoperability standards, would be beneficial for purchasers, providers, and consumers. Financial incentives for physicians to install EHRs are necessary to reduce financial risk and to accelerate change. Institutionalizing training programs that address some of the difficult issues of leadership, change management, team development, and systems analysis would be helpful for training physicians and office staff members in these important concepts.

Developing and incorporating policies that address requirements for clinical data-sharing and reporting on performance measures and quality data should be helpful in the transformation of health care administration and delivery. The promotion of electronic personal health records, such as the Continuity of Care Record, should facilitate the efficient transfer of pertinent clinical data.

CONCLUSIONS
There is growing evidence demonstrating that EHR systems that allow for electronic health information exchange across organizations can improve the quality and safety of health care delivery, because the systems are longitudinal across providers, care settings, and purchasers. HIT, when used effectively, allows for more-nearly real-time validation of processes and outcomes related to disparities, patient engagement, patient safety, and the quality, efficiency, effectiveness, and equitableness of health care delivery, at the individual, provider, and community/regional levels.

Government, through its unique roles as regulator, purchaser, provider, and facilitator, has an opportunity and an obligation to play a major role in accelerating the implementation of EHR systems and electronic health information exchange. Providers, who are expected to deliver appropriate care at designated locations at an appropriate cost, are dependent on HIT for efficient effective health care.

Health care services and delivery are undergoing a transformation that is creating a need for a transformation in health care administration, which depends on a transformation in HIT. This transformation is just beginning and should be viewed as a journey, not a destination, a journey we take together. The course and the pace of this journey can be influenced by sound governmental policies that stress global standards for quality patient care and incentives that deal effectively with physician concerns.

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