

Issues in Missouri Health Care 2009

Wiring Missouri's Health Care:
Electronic Health Records
and Health Information Exchange

Acknowledgement

This is one in a series of issue papers on critical health care issues facing Missouri and the nation prepared by Health Management Associates, Inc., a national health care policy research and consulting firm and made possible by funding from the Missouri Foundation for Health and the Healthcare Foundation of Greater Kansas City. The papers are intended to provide nonpartisan expert analysis in an accessible format that will contribute to the public dialogue on the state of health care in Missouri. Questions should be directed to Thomas McAuliffe, Policy Analyst, Missouri Foundation for Health, 314.345.5574, tmcauliffe@mffh.org.

Issue Statement

The American health care system offers some of the most advanced and effective care in the world. Yet, it also is fragmented and inefficient, does not emphasize quality, and makes it difficult for consumers to compare price and quality. As a result, the US spends more per capita on health care than any other developed country, but achieves equal or lower results in terms of health outcomes and access to services.

Modern health information technology (HIT) offers unprecedented opportunities to improve health care for Americans, promising better quality at a lower cost. Policymakers from all spheres have demonstrated a strong interest in using electronic health records (EHR) and electronic health information exchange (HIE) to achieve a health care system that is efficient, effective, safe, accessible, transparent, and affordable for all Americans.

Background

Benefits of HIT and HIE

Many health care institutions have been investing in computerized systems for years, but only to automate the administrative or back-office work within the institution. New information systems are being designed to enable health information exchange across systems and institutions.

Evidence suggests the use of secure, standards-based HIT and the timely, electronic exchange of health information could improve patient care, increase efficiency, and result in:

- Higher quality care through adherence to treatment protocols and guidelines.
- Reduction in adverse drug events and detection of pending patient error.
- Fewer duplicative treatments and tests.
- Administrative efficiencies through decreased paperwork.
- Improved population health and coordination of clinical care as a result of timely and appropriate access to individual and community health information.
- Early detection of infectious disease outbreaks around the country.
- Disease management tracking.
- More complete data sources for use in research and policy.¹

Widespread adoption of EHRs and HIE has the potential to help consumers and patients manage their own health, help doctors and hospitals to immediately gather relevant information to best treat an individual patient, improve tracking of chronic disease management, and provide for early detection of infectious disease outbreaks around the country.

Barriers to EHR Adoption and HIE Development

Despite benefits, there are significant barriers to adopting electronic health records and developing electronic health information exchange. The technology exists, but it remains far

¹ J. Walker, "Electronic Medical Records and Health Care Transformation," *Health Affairs*, 24, no.5 (2005): 1118-1120.

from universally deployed throughout the health care system, particularly for small and medium-size physician practices and community health centers. Nationally, less than one-in-five physician practices and one-in-ten community health centers use an EHR. Many hospitals have computerized systems, but less than one-in-ten have a fully integrated system. The most significant barriers to adoption are described below.

Financial incentives to adopt EHRs and electronic HIE are misaligned. The purchasers of EHRs and other HIT—physician practices, hospitals, and other direct care settings—absorb purchase and maintenance costs but do not necessarily see equivalent return on their investment. Financial benefits more frequently accrue to health plans, employers, and government-funded coverage programs that see a decrease in redundant health care services, avoidable hospitalizations, and medical errors.

Privacy and security is a concern. Storing, moving, and sharing health information in electronic form raises questions about how to protect patient privacy and data security. Privacy and security policy must balance the potential risks of having information available electronically against the risks of having a health care system that struggles to effectively treat patients and conduct public health activities because of the lack of this information.

Standards for system interoperability are used inconsistently. Data and technical standards exist, but they are frequently implemented differently because there is not enough specificity. Many large health systems (including state Medicaid programs) developed their own proprietary systems, and are reluctant to overhaul these “legacy” systems to enable interoperability.

State health care licensure requirements and processes vary. Current licensure requirements differ by state for most health professions, making it legally difficult to allow e-health consultations across state borders. In addition, federal and state laws regulate the terms of consent for all disclosures for mental health, substance abuse, and HIV/AIDS. The consent process for these types of care complicate e-health activities.

Publicly funded programs face unique challenges. States can promote the adoption of EHRs and electronic HIE in the publicly funded programs they control, including Medicaid and state employee health benefit programs, but there are challenges. Disparate and antiquated data systems, how those systems are financed (from multiple sources), and limited workforce and other resources to support HIT initiatives are all barriers to adopting HIT.

The Tools: Electronic Records and Information Exchange

The rate of innovation in HIT over the past decade is unprecedented. The mainstream use of the Internet and the transfer of proven technology from other sectors into health care have created new and powerful policy solutions. Many of these concepts are intertwined, and there is logic in how they fit together, each element building on another, as described below:

- ***Electronic medical record (EMR):*** A set of databases or repositories that contain the health information for patients within a given institution or organization. An EMR may contain a variety of datasets, including laboratory, pharmacy, patient registration, radiology, surgical,

clinic and inpatient notes, preventive care, emergency visits, billing information, and so on. EMRs are generally clinician-focused, enhancing clinical workflow. EMRs are said to be *interoperable* if they are able to transmit and receive data in a standard format.

- ***Electronic Health Record (EHR)***: Extends the notion of an EMR to cross-institutional data sharing. An EHR may be made up of EMRs from many locations and/or sources. EHR systems link and potentially integrate clinical, administrative and financial information to improve health care delivery, enhance the opportunity for improved health outcomes, and address costs and effectiveness through administrative efficiencies. An EHR is generally patient focused and spans episodes of care rather than a single encounter. An EHR can only be present if the participating sites all have an EMR in place that is interoperable.
- ***Personal Health Record (PHR)***: An Internet-based set of tools that allows people to access and coordinate their health information and make appropriate parts of it available to those who need it. PHRs are a developing concept, but the idea is to enable individuals to access their personal health information via the Internet at any time and from any location.
- ***Health Information Technology (HIT)***: A general term for equipment and networks needed to provide telehealth, telemedicine and bioinformatics services. Examples of HIT that receive a lot of public policy attention include: Computerized physician order entry (CPOE), a process of electronic entry of medical practitioner instructions for the treatment of patients under his or her care, usually in a hospital; Electronic prescribing (e-prescribing), computerized, online tools to create and sign prescriptions, and send them to pharmacies via computer networks; and Telehealth, which involves transferring health information via telephone, the Internet or other networks for the purpose of consulting on curative or preventive care.
- ***Health Information Exchange (HIE)***: Refers to the sharing of clinical and administrative health care information electronically across organizations within a region or community. HIE provides the capability to electronically move clinical information between disparate health care information systems while maintaining the meaning of the information being exchanged. Formal organizations are now emerging to provide both form and function for health information exchange efforts. These organizations (often called Regional Health Information Organizations, *or RHIOs*) are ordinarily geographically-defined entities which develop and manage a set of contractual conventions and terms, arrange for the means of electronic exchange of information, and develop and maintain HIE standards.
- ***Electronic Health (e-Health)***: An umbrella term commonly used to describe any health care practice supported by electronic processes and communication. It encompasses all of the technology, concepts and terms described above, including EHRs and HIE.

The Vision: A National Framework

In 2004, President Bush outlined a plan to ensure that most Americans have EHRs within the next ten years. Since then, the White House, Congress, and private sector have acted to accelerate the development of a national health information technology system. Federal e-Health

initiatives are coordinated through the US Department of Health and Human Services by the Office of the National Coordinator for Health Information Technology (ONC). In June 2008, the ONC released a strategic plan “to guide the nationwide implementation of interoperable health information technology in both the public and private health care sectors that will reduce medical errors, improve quality, and produce greater value for health care expenditures.” The plan proposes a national framework that is both patient-focused and population-based.

Patient-Focused Health Care

The first goal of the federal strategy is to transform care delivery and personal health through the access to and use of electronic health information. This approach focuses on the processes of health care that primarily involve interactions between patients and care providers, but increasingly reflect activities of individuals to seek out price and quality information and take a more direct role in making decisions about their own health and well-being. Informed patients will be able to make better choices and decisions toward maintaining a healthier lifestyle, potentially preventing debilitating and costly illnesses—and being informed depends on having access to the right information at the right time to make decisions. Individuals will benefit from improved system-wide efficiencies through decreased paperwork, consistent and controlled access to health information, and the ability to securely access and transfer their information for purposes that may extend beyond health care.

Population Health

The second goal of the federal strategy is to advance population health—public health, health care quality improvement, biomedical research, and emergency preparedness—through timely access to electronic health information. This approach concentrates on enabling electronic health information for critical health improvement activities that promote the health of communities and the population as a whole nationwide. It envisions the use of interoperable HIT to develop more robust systems for disease detection and the mobilization of resources to manage outbreaks, generating new knowledge from clinical studies, identifying health care practices associated with best outcomes, and helping communities manage and recover from natural disasters. Because so much of the information necessary to improve population health can be drawn from the clinical information generated in the course of direct health care delivery, new systems need to meet the needs of patient-focused health care and population health and use by the patient.

National Health Information Network

The federal vision is for a National Health Information Network (NHIN) to securely connect providers, health systems, consumers, and communities to electronically share health information. This “network of networks” is not envisioned as a national, centralized repository or data store. Instead, the interconnected networks will share common services and adhere to standards and requirements to enable interoperability, while information remains stored within the organizations where it was created. Since 2005, the federal government has been investing in developing different architectures that may potentially support the NHIN. Efforts are underway to test the capabilities of these architectures in real-world HIE community settings.

A Call to Action: State Initiatives to Improve Care

Important work is underway across the United States to implement initiatives intended to achieve much-needed reforms in the American health care system. States have taken the lead to enact ambitious, innovative initiatives to drive improvements in quality, expand coverage, address disparities, and promote healthier living. Essential to states' efforts to transform health care in the United States are health information technology and health information exchange.

State E-Health Priorities

Most states are actively promoting the use of information technology as a way to improve the efficiency and effectiveness of health care. State eHealth initiatives include health information exchanges and use of EHRs, telehealth, e-prescribing, and decision support tools. States are encouraging e-health activities in the private sector and in a wide variety of public programs, from public health agencies, Medicaid, and state employee health benefit plans to state-run mental health hospitals and prison systems. Consensus among states has emerged that, despite significant implementation challenges, e-health policies and initiatives are well worth the effort.

Electronic health information exchanges top governor's e-health priorities. More than three-quarters of the states identify HIE activities among their governor's highest e-health priorities. Eleven states, including Missouri, have formed a statewide committee, commission, or board to study HIE issues, and seven have developed or implemented HIEs (Arizona, Colorado, Delaware, District of Columbia, Kentucky, Louisiana and Oklahoma). Four states (Florida, Georgia, Minnesota and Washington) provide grants to spur both HIT and HIE development.

Nearly all state Medicaid agencies are pursuing e-health initiatives. Over half of the states have implemented web-based Medicaid Management Information Systems (MMIS), telehealth, and decision support tools. About a third of states reported use of web-based provider enrollment and certification and immunization registries.

Public health agencies have extensive experience operating electronic registries. For decades, many state public health agencies have operated electronic registries related to disease and other surveillance, immunization, newborn screening, and Medicaid's Early and Periodic Screening, Diagnostic, and Treatment program. Nearly every state operates one or more of these registries, which provide the foundation for population-based e-health activities. Public health agencies use EMRs or EHRs in seven states (Indiana, Kansas, Massachusetts, New Mexico, Tennessee, Utah and West Virginia).

Recent Activities in Missouri

Governor Matt Blunt created the Missouri Healthcare Information Technology Task Force in 2006 to create a roadmap to ensure that healthcare information can be readily available to health care providers, consumers and public health agencies in order to make the best healthcare decisions and to improve patient safety by reducing medical errors.

Missouri's HIT Task Force recommended that the State require all agencies to develop a plan to adopt healthcare information technology, embrace HIT and telehealth through the Medicaid program, explore options to expand non-Medicaid telehealth and telepharmacy resources, develop a statewide bioterrorism and emergency preparedness telehealth network, create a statewide Missouri Telehealth Advisory Council to ensure the cogent expansion of telehealth networks and services, and develop a University Telehealth Research Group.

The Missouri HIT Task Force recommendations are intended to accelerate the adoption of HIT solutions throughout the state, and build on progress already underway in local communities. The table below lists some of the local HIT initiatives in Missouri, most of which bring multiple local stakeholders together to create the relationships required to build interoperable EHRs and the networks required to exchange health information electronically.

Regional Health Information Initiatives in Missouri

Project Name/Sponsor	Description
Lake Regional Health System	3-county resort area secure email
Mercer Putnam Sullivan Rural Network	3-county rural network
Project InfoCare; Citizens Memorial Hospital	Bolivar rural community-wide EMR
Healthe Mid-America	Kansas City employer driven non-profit community PHR
Kansas City Regional Electronic Exchange	Kansas City non-profit data exchange broker for EMR/PHR
KC CareLink	Kansas City safety net provider network
St. Louis Business Health Coalition	St. Louis community data project with insurers
SSM Health Care	St. Louis area hospitals installing EMRs
Mercy Health System	St. Louis area hospitals installing EMRs
St. Louis Integrated Health Network	St. Louis City and County safety net provider network
Pediatric Adolescent Research Consortium	St. Louis web-based communication
MO HealthNet (Medicaid)	Statewide CyberAccess, e-prescribing, centralized pharmacy pricing, data mining and analysis
Critical Access Hospital Network	Statewide technical support
Department of Health and Senior Services	Statewide telemedicine initiative
myHealth Folders	Statewide Web-based PHR
Claims Record for ED Project	Statewide WellPoint BCBS claims record
HIT Ambulatory Chronic Disease Care	University of Missouri HIT/chronic disease initiative

Sources: *State Solutions Map* and conversation with Julie Eckstein, Center for Health Transformation Missouri Project.

Policy Options

States are in a strong position to accelerate widespread adoption of HIT and electronic HIE. The State Alliance for E-Health—a consensus-based, executive-level body of state elected and appointed officials—was established by the National Governors Association with federal support from ONC to address the unique role states play as catalysts for the adoption of interoperable electronic HIE. The State Alliance recommends the following six actions for governors and legislators to accelerate the use of HIT and HIE.

Provide leadership and support for e-health efforts. Leadership and political support from governors and state legislators are critical to the success of HIT and electronic HIE initiatives. Specific strategies include designating a single authority for state government interagency coordination and collaboration with statewide public-private efforts; establishing a roadmap articulating vision and strategy for electronic HIE development; issuing executive orders and legislation furthering e-health activities; utilizing the goals of health system transformation, transparency, and quality improvement to drive HIT and electronic HIE; and making a patient-centered, interoperable, and portable EHR available for every child by 2014.

Address health information privacy and security. Consumer and provider trust are key to the success of electronic HIE. Careful consideration must be given to crafting a balance between the need to protect consumers against privacy violations and security breaches and enabling appropriate provider access to electronic health information. Strategies include consolidating and updating relevant privacy and security laws to better respond to consumer protection needs in an electronic exchange environment, and educating leaders and supporting efforts to reduce variation of state privacy requirements while ensuring appropriate consumer protections.

Promote the use of standards-based, interoperable technology. Efforts are underway at the national level to standardize HIT systems to ensure they are interoperable and have the security and privacy capabilities needed. States can support these efforts by promoting the acquisition of certified systems; participating in national certification and standards-setting processes; ensuring bi-directional exchanges of data between clinical care and public health; requiring public program health information systems to conform to standards recognized by standards-setting bodies endorsed by the Secretary of HHS; aligning policies and laws to support intra- and interstate data exchange among public programs; and developing and implementing incentive programs or reimbursement policies that support HIT adoption and electronic HIE.

Streamline the licensure process to enable cross-state e-health. Providing e-health services across state lines is hampered by the current processes for obtaining health professional licenses, which differ by health profession and state. The State Alliance recommends that states direct each state health professional board to streamline the licensure application and credentialing process and work with counterparts in other states to develop a nationwide set of credentialing parameters; and streamline the medical and pharmacy licensure structure to establish a process that ensures licensure recognition by other states.

Engage consumers to use HIT in managing their health and health care. Raising consumer awareness about the purpose and potential value of electronic HIE is a necessary step to gaining public trust and commitment of resources. Specific strategies include directing public programs to develop consumer engagement tools; providing publicly funded health programs with resources to develop cultural and linguistic competency; and directing the Medicaid and state employee health plan programs to implement standards-based personal health records.

Develop workforce and agency capacity to support electronic HIE efforts. States can leverage publicly funded health programs to drive major HIT and electronic HIE initiatives, but these programs require leadership and staff with the policy, business and technical skills required to launch and sustain such an initiative. Strategies include supporting publicly funded health

programs in their efforts to secure executive leadership who are trained in and understand HIT and HIE projects; providing Medicaid with technical assistance and resources; providing public health agencies with resources necessary to train and hire workforce to support public health system modernization efforts; and establishing flexible financing mechanisms to maximize public program, cross-agency investments.

Implications

The agenda laid out by the State Alliance for e-Health has several important implications for Missouri.

- State privacy requirements can be aligned with national trends to help facilitate the move to interoperability.
- National certification and standards development efforts can be promoted through acquisition policies, participation in the national certification and standards development process, and promoting inter- and intrastate data exchange among public programs consistent with those standards.
- State licensure requirements and processes for health care professionals can be streamlined to facilitate e-health across state lines.
- Publicly funded health care program leadership and workforce can be trained in the policy, business, and technical skills to support the move toward e-health.

Resources

Primary Sources for this Paper

Accelerating Progress: Using Health Information Technology and Electronic Health Information Exchange to Improve Care, the first annual report of the State Alliance for E-Health, National Governors Association Center for Best Practices (March 2008): <http://www.nga.org/Files/pdf/0809EHEALTHREPORT.PDF>

State Solutions Map, Center for Health Transformation Missouri Project:
http://www.healthtransformation.net/cs/missouri_project

State E-Health Activities in 2007: Findings from a State Survey, V. K. Smith, K. Gifford, S. Kramer (Health Management Associates) for The Commonwealth Fund (February 2008):
http://www.commonwealthfund.org/publications/publications_show.htm?doc_id=669309

The ONC-Coordinated Federal Health IT Strategic Plan: 2008-2014, Department of Health and Human Services Office of the National Coordinator for Health Information Technology (June 2008):
<http://www.hhs.gov/healthit/resources/HITStrategicPlan.pdf>

Organizations

American Health Information Community – AHIC is a federal advisory body, chartered to make recommendations to the Secretary of HHS on how to accelerate the development and adoption of Health IT.

Agency for Healthcare Research and Quality – AHRQ funds HIT research and development programs with a focus on rural and underserved areas. AHRQ is providing technical assistance to Medicaid and SCHIP agencies to help them develop, implement, and participate in HIT and HIE.

Centers for Medicaid and Medicare Services – CMS's is providing financial incentives through Medicare to physician practices that use certified EHRs to determine if widespread adoption and use of interoperable EHRs will reduce medical errors and improve the quality of care for consumers.

Certification Commission for Healthcare Information Technology – CCHIT is a voluntary, private-sector organization working with ONC to develop and evaluate certification criteria for electronic health records and components of developing personal health records.

Healthcare Information Technology Standards Panel – HTSP is a public-private partnership with broad participation across more than 300 health related organizations that is working to identify and harmonize data and technical standards for specific priorities advanced by the American Health Information Community.

Health Resources and Services Administration – HRSA provides technical assistance to health centers and other HRSA grantees in adopting model practices and technologies to meet the needs of people who are uninsured, underserved and/or have special needs.

Missouri Project—a collaboration of leaders dedicated to consumer-driven health care reform through strategies that include health information technology, covering the uninsured, and chronic disease management.

Office of the National Coordinator for Health Information Technology – ONC provides leadership for the development and implementation of a nationwide health IT infrastructure and coordinates efforts to make an electronic medical record available for most Americans by 2014.

State Alliance for E-Health—the National Governors Association is working with ONC to manage the State Alliance, a consensus-based, executive-level body of state elected (and appointed) officials to collectively address state-level HIT issues and challenges to interoperable electronic health information exchange.

Other HIT associations include the ***American Health Information Management Association***, the ***Healthcare Information and Management Systems Society***, and ***The National Alliance for Health Information Technology***.