

Health Information Technology in California: Current Trends, Future Opportunities

Informational Hearing

March 13, 2009

Background Paper

Health information technology (HIT), which may be defined broadly as the application of technology (hardware, software, networking capabilities) to enable the comprehensive management (such as storage, sharing, and use) of clinical information to improve and streamline health care delivery, is seen by many as a prerequisite to improving quality of health care delivery and containing costs in a \$2.4 trillion health care economy.

Among its potential uses include: reduced medical and medication errors; elimination of duplicative testing and unnecessary paperwork; making the cost and quality of health care services more transparent; access to information on comparative effectiveness of treatments and elimination of payment for ineffective treatments; improved public health monitoring; improved patient outcomes, whether in the form of chronic disease management or emergency department encounters. While it's uncertain how much cost savings health information technology can yield and who will benefit financially, health information technology has the capacity to improve the quality of health care through a more streamlined health care delivery system.

Despite the potential for better care that HIT provides, according to a January 2009 paper published by Commonwealth Fund, U.S. health care providers make minimal use of health information technology (HIT), compared with other health systems in the industrialized world. "...About 17 percent of U.S. physicians and perhaps 8 percent to 10 percent of U.S. hospitals have at least a basic electronic health record (EHR) system. In most European countries, as well as in New Zealand and Australia, 80 percent to 100 percent of primary care physicians have EHRs (although adoption rates for specialists and hospitals are far lower)...." A survey from the Center for Disease Control and Prevention's National Center for Health Statistics provides a different snapshot of physician EHR use: almost 40 percent of physicians said they used either a full or partial clinical EHR, however only 4 percent of physicians said they used a fully functional EHR system.

Electronic medical record (EMR) adoption models

The Healthcare Information and Management Systems Society (HIMSS), a not-for-profit organization dedicated to promoting a better understanding of health care information and management systems, documents and validates levels of electronic medical record* (EMR) adoption.

*In this paper, EMR and EHR are used interchangeably.

The highest level of adoption (stage 7) represents a paperless EMR environment, where clinical information can be readily shared electronically between hospitals, ambulatory clinics, sub-acute environments, employers, payers and patients. This stage also supports use of health and wellness information by consumers in addition to providers, and makes use of data warehousing and data mining technologies to capture and analyze clinical data, and improve care through decision support tools.

Other layers of EMR, according to the HIMSS EMR adoption model, include: full physician documentation/charting; a radiology picture archiving and communication system, where digital and film-based images are available to physicians in a secure network; medication administration, with bar coding, radio frequency identification, or other technology that is integrated with computerized practitioner or physician order entry and pharmacy; computerized practitioner or physician order entry for use by any clinician; clinical decision support related to evidence-based medicine protocols; clinical documentation (e.g., vital signs, flow sheets, nursing notes, care plan charting, the electronic medication administration record); error checking in clinician decision support related to order entry.

The lowest levels in the EMR adoption model, which describes where most U.S. and California hospitals are at, include clinical systems, where data is stored in a clinical data repository for physicians to retrieve and review, and includes rudimentary clinical decision support systems.

According to HIMSS, only 15 hospitals in the country have reached stage 7 (validated through HIMSS analytics), which include 12 Kaiser Permanente Health Foundation Medical Centers in California. California achieved a mean score of 2.4126, and a median score of 2.1960 on a scale between 0 and 7.

EMR/EHR is only one part of the HIT spectrum. Other types of health information technology include health information exchange (HIE), telemedicine, handheld tools and technologies that engage either the physician or consumer, applications that aggregate clinical outcomes information, wireless technologies, and personal health records, among others. These may be integrated or extend EMR/EHR's functionality.

Barriers to HIT

While HIT encompasses payers and consumers as well as providers, the focus of HIT and the barriers to full deployment of HIT center around physicians. Such barriers include the initial cost of information technology acquisition (for small physician practices, initial median cost of approximately \$30,000 per physician); lost revenue and productivity in the implementation due to changes in workflow at both the clinical and administrative levels; uncertainty surrounding return on investment; lack of knowledge about standards and vendors; and lack of staff resources to dedicate to the support of these systems.

Use of HIT by California consumers is also low, according to a March 2008 report by the California HealthCare Foundation. Among its findings:

- Nearly half of California consumers obtained health or medical information on the Internet within the last 12 months.
- While 40 percent of consumers are interested in accessing a personal health record (PHR) online, only 2 percent currently do.
- More than half are very or somewhat interested in scheduling an appointment online, but only 7 percent have scheduled an appointment this way. The two top reasons they cite for not scheduling an appointment online are concerns about security and confidentiality, and the unavailability of this option.
- Nearly half are interested in receiving email from their physician, but only 4 percent have communicated this way.
- Seventy percent say it is important that their physician's office incorporates technology into its practice.

The report noted that, "Although consumers frequently use and seek out health information online, most are ambivalent about using health information technology (HIT), such as personal health records, due to concerns about privacy and confidentiality."

Underscoring concerns about privacy, a 2006 survey conducted by the Markle Foundation, revealed that 80 percent of survey respondents, when asked about the benefits of and concerns about online health information, said they were very concerned about identity theft or fraud; 77 percent reported being very concerned about their medical information being used for marketing purposes; 56 percent were concerned about employers having access to their health information; and 55 percent were concerned about insurers gaining access to this information.

Federal action on HIT

On February 17, 2009, President Barack Obama signed the American Recovery and Reinvestment Act of 2009 (ARRA), which invests more than \$787 billion in an economic recovery package that includes more than \$36 billion for health information technology over the next several years. The majority of these funds are incentive payments that will go to Medicaid and Medicare providers who are able to demonstrate "meaningful use" of health information technology.

Medicaid providers are eligible for incentive payments of approximately \$64,000 over a 5 to 6 year period, while Medicare providers are eligible for up to \$44,000 in incentive payments. Providers who serve both Medicare and Medicaid must choose one source of reimbursement only. Hospitals are eligible to receive a base funding of \$2 million, with additional funds provided according to a statutorily prescribed formula related to discharge data. ARRA also creates a penalty system under Medicare, which begins in 2015.

In addition to incentive payments that flow through these programs, ARRA provides for \$2 billion in discretionary funding for the newly codified Office of the National

Coordinator for Health Information Technology (ONCHIT) to carry out provisions of the bill related to HIT promotion, such as planning and implementation grants, workforce training grants, grants for the creation of regional extension centers, and grants to create state loan programs for EHR. The National Coordinator will award, on a competitive basis, grants to States or tribal entities for creating loan programs for “health care providers” (as defined below). Most, if not all, of these grants require in-kind matches to draw down federal dollars.

Apart from these funding sources, ARRA also provides roughly \$1.5 billion through the Health Resources and Services Administration to community health centers to be used solely for construction, renovation, and equipment, part of which may be used to acquire HIT systems; and \$400 million through the Health and Human Services Agency (HHS) to accelerate the development and dissemination of research assessing the comparative effectiveness of health care treatments and strategies, which may involve clinical registries, clinical data networks, and other forms of electronic health data that can be used to generate or obtain outcomes data. Finally, ARRA provides for new technology research and development grants and broadband opportunity grants, which may create further opportunities to expand the use of health information technologies.

In addition to financial support and incentives related to HIT, the Act also institutes several changes in the role of the federal government, including the codification of ONCHIT within HHS, which will review and endorse HIT standards and coordinate the HIT policy and programs of HHS and other relevant agencies. ARRA requires ONCHIT to adopt initial standards by December 31, 2009, (through the rulemaking process) and the National Coordinator is also charged with developing health record technology, unless it is determined that the marketplace is substantially and adequately meeting the needs of providers.

ARRA calls for a HIT Policy Committee to make recommendations to the National Coordinator regarding the implementation of a nationwide HIT infrastructure, and a HIT Standards Committee to make recommendations on standards, implementation specifications, and certification criteria for the electronic exchange and use of health information.

Finally, ARRA expands federal patient privacy and information security requirements beyond the current requirements of the Health Insurance Portability and Accountability Act. Expansions include applying HIPAA security provisions and penalties directly to the business associates of covered entities; requiring notification of patients if the security of their personal health information has been breached; requiring an accounting of disclosures of personal health information made through HIT systems; prohibiting the sale of a patient’s personal health information without the patient’s permission and prohibiting covered entities from being paid to use patients’ medical information for marketing purposes; and providing for enforcement by State Attorneys General.

Prior to the passage of ARRA, federal efforts related to health information technology converged around President Bush’s call for the widespread use of EHRs by 2014 and

creation of the Office of the National Coordinator for Health Information Technology (ONCHIT) within the U.S. Department of Health and Human Services. In August 2006, President Bush issued an Executive Order committing federal departments and agencies that purchase and deliver health care to require the use of health information technology that is based on interoperability standards recognized by the Secretary of Health and Human Services. Additionally, the federal Deficit Reduction Act authorized over \$150 million in grant funds for improvements, including HIT, in state Medicaid programs (California received no awards), while the Health and Human Services Agency awarded \$36 million in grants to public and private organizations to focus on four specific areas of HIT development. The National Institutes of Health and the U.S. Agency for Healthcare Research and Quality also awarded HIT-related grants, while national bodies such as the Health Information Technology Standards Panel (HITSP) and the Certification Commission for Healthcare Information Technology (CCHIT) progressed in the harmonization of standards and HIT product certification.

Several congressional bills related to HIT were introduced in recent years, including legislation to adopt HIT standards, modify the Medicare payment system to reward providers for using HIT, and create competitive grants for non-profit hospitals, group practices and other providers to facilitate and enhance the widespread adoption of HIT.

The California HIT landscape

In the adoption of health IT, California leads the national average, but use is segmented largely according to provider type. According to the California Association of Physician Groups, approximately 11.1 million patients are under the care of large medical groups with EMRs, primarily under the HMO model. Competition and quality have been important drivers of EMR/EHR adoption by larger groups and systems.

According to a May 2008 California HealthCare Foundation (CHCF) report, 79 percent of Kaiser physicians and 57 percent of large group practices (defined as having at least 10 physicians in the group) used EHRs in 2007. In comparison, only 2 percent of independent practice associations and 3 percent of community clinics have fully installed EHRs. The CHCF report highlighted that, “nearly all physicians who use EHRs said such use helps their practice provide better care.”

Payers in California have participated in the funding of HIT through the Integrated Healthcare Association’s pay-for-performance initiative, which last year included an incentive for purchasing HIT, and this year will include an incentive for using HIT. Additionally, hospitals and independent physician associations (IPAs) have supported HIT use among their providers.

In addition to private efforts, several non-profit grants have funded HIT in the clinic setting. Between 1999-2006, the Community Clinics Initiative provided \$41 million in grants to 82 percent of clinics in California to improve the information technology capacity of community health centers. According to a report published by the California Endowment and Tides, most clinics have built a solid technology infrastructure and automated core business functions as a result of the funding.

Additionally, California has several regional health information organizations (RHIOs) or health information exchanges (HIEs) involved in supporting the development of secure methods of health information exchange within a particular geographic area among various health care providers.

While not a conventional RHIO or HIE, Joint Venture Silicon Valley Network, a 15-year-old public benefit corporation, undertook an effort to overcome barriers in applying information technology to health care by convening health care providers, employers, and insurers on specified projects, such as establishing a claims transmission network, and developing a health data warehouse and exchange. Joint Venture ceased its “Smart Health” project after more than two years, concluding that, “while individual stakeholders are making significant internal progress toward this goal, Valley-wide solutions cannot move forward within the current environment.”

State government efforts

In July 2005, Governor Schwarzenegger issued the first of two Executive Orders directing his administration to establish an “eHealth Action Forum” to develop a state policy agenda for implementation of a comprehensive HIT program by July 2007. The order also directed administration officials to devise financing strategies to allocate at least \$200 million in investment funds and \$40 million in grant monies, both derived from California health plan mergers to benefit the diverse needs of rural communities, medical groups, and safety net providers. The order also directed state agencies to oversee public/private financing alternatives to facilitate rapid adoption and sustainability of health information technology for hospitals, physician groups, physicians, and other health care providers, and to develop a model for connecting rural health clinics to medical centers using telemedicine and other technology.

In January 2007, the Governor announced, as part of his health insurance reform proposal, a number of initiatives related to HIT, such as establishing a Deputy Secretary of HIT and a state HIT Financing Advisory Committee to coordinate the state’s HIT efforts and develop financing mechanisms; implementing universal e-prescribing by 2010; developing standardized personal health records (PHR) within the public and private sectors; and implementing a county-level pilot electronic medical record system for mental health patients within the requirements of Proposition 63, the Mental Health Services Act.

In January 2007, following the eHealth Action Forum, the consulting firm Accenture released a report containing findings and recommendations regarding HIT expansion in California and a roadmap to achieving the goals outlined in the Executive Order. Accenture sought information from state agencies and the state chief information officer, and more than 130 public and private health leaders, including some from other states and the federal government in preparing its California Health Information Technology Study.

The study highlighted five key action areas for the state, including:

- Establishing of statewide HIT leadership, consisting of a designated leader and a strong advisory group to provide public-private collaboration on HIT issues.
- Structuring incentives and identifying financing methods, especially for clinical systems for poorly automated care delivery in sites with low access to capital, and the "last mile" of broadband establishment. Primary investment structures discussed in the HIT roadmap include grants and loans; contracts and purchases; and financial incentives built into ongoing fee schedules.
- Investing in HIT that would allow providers and entities of all types to link to a secure, "operating core connecting infrastructure" (technology and communications) to achieve 100 percent health data exchange (HDE) in ten years, including efforts to enable digitized data at the point of care and connection to the core infrastructure.
- Augmenting privacy and security protection.
- Engaging consumers in these changes.

Accenture also recommended near-term steps including appointment of a state HIT czar and an advisory board, establishing a foundation for financing, especially involving the grants and loans efforts; drafting a health data exchange blueprint; appointing a patient panel; organizing current privacy and security efforts, and laws and regulations; and developing pilot efforts based on priority patient populations.

In March 2007, the Governor issued a second Executive Order directing his administration to convene a workgroup to solicit input and participation in the development of a comprehensive strategy to increase quality, strengthen health care transparency and increase accountability in public and private health care delivery systems. The order identified key actions for the state to pursue, including providing state leadership to accomplish 100 percent electronic health data exchange, leveraging state purchasing power, developing a quality reporting mechanism through the Office of the Patient Advocate, and strengthening the ability of the Office of Statewide Health Planning and Development to collect, integrate and distribute data on health outcomes, costs, utilization and pricing for use by purchasers, health plans, providers and consumers.

In December 2008, the state HIT Financing Advisory Committee submitted a report, which was made publicly available in early February 2009, containing five near-term and long-term priority recommendations, among others. The recommendations were to:

- Create a Public-Private Partnership to consolidate future public and private health IT resources (dollars and expertise) and coordinate grants and loans. (Near-Term)
- Finance EHRs through medium-term financing, rather than the more typical short-term clinical information systems loan, and determine ways to finance "operating" losses that are a continuation of the original EHR investment and investigate ways to

reduce transaction costs; determine the feasibility of using the California Health Facilities Financing Authority to issue bonds for this financing. (Near-Term)

- Evaluate the feasibility of new organizations for implementing and providing EHR services. Investigate the possibility of creating support service organizations that either act as application service providers and/or provide support for EHR implementation and development of templates. (Mid-Term)
- Determine the feasibility of establishing a state grant program. (Long-Term)
- Encourage Medi-Cal to consider demonstration projects that incorporate new reimbursement models that require health IT (e.g., investigate Medi-Cal pay-for-performance fee-for-service incentives for medical homes services). (Long-Term)

Legislation

In addition to the Governor's Executive Orders and the resulting reports, the Legislature heard several bills related to health information technology in recent years, including:

SB 320 (Alquist, 2007) would have required the California Office of HIPAA Implementation, in consultation with the others, to develop a plan for implementation of the California Health Care Information Infrastructure Program no later than March 1, 2009, that would seek to provide the opportunity for every resident of the state to have an electronic health record. *Vetoed by the Governor.*

SB 1338 (Alquist, 2006) would have required the California Health and Human Services Agency, in conjunction with certain other state departments, to develop a strategic plan to foster the adoption of HIT. This plan would have included, among other provisions, HIT standards and identified incentives to promote the use of EHRs and PHRs. *Held in the Assembly Appropriations Committee.*

SB 1672 (Maldonado, 2006) would have required the California Health Facilities Financing Authority to establish a low-interest loan program to provide financing for the purchase of health care information technology systems to participating health care institutions, providers, and provider organizations, as specified. *Held in the Senate Appropriations Committee.*

AB 1672 (Nation, Richman, 2005) In an early version, would have established deadlines for various health care entities to adopt EHRs, provided enhanced Medi-Cal reimbursement for EHR adoption, and provided state funding to promote HIT development. *These provisions were amended out of the bill.*

AB 225 (Negrete McLeod) Chapter 698, Statutes of 2006, allows nonmonetary remuneration between certain health care entities, in the form of hardware, software, or information technology and training services, to enable them to receive and transmit electronic prescription information in accordance with the standards set forth in the Medicare Prescription Drug, Improvement and Modernization Act of 2003, as specified.

Other states

While legislation in California has for the most part been stymied, several states have taken significant steps in recent years to address health IT. According to the National Conference of State Legislatures (NCSL), from January 2007 through August 2008, more than 370 bills with provisions relating to health IT were introduced in state legislatures. NCSL reported that 132 bills with health IT content were enacted in 44 states and the District of Columbia, compared to 36 bills, which were enacted in the 2005 and 2006 time period. NCSL reported five major policy trends across the enacted legislation, including planning, targeted financing initiatives, updating privacy laws to facilitate health information exchange, promoting health information exchange, and advancing adoption and use.

According to NCSL's report, among the revenue sources states have considered to fund health IT activities are dues, bonds, insurer assessments and user fees. However, few states have adopted dedicated funding streams to fund health IT initiatives. Rather, some state public programs—such as state employee health plans and Medicaid—provide funding streams by paying providers to participate in health information exchange organizations and by increasing or supplementing reimbursement rates for providers who use electronic health records. Financing efforts typically involved one-time appropriations, the creation of health IT funds, and revolving loan funds.

Other strategies states have considered to facilitate HIT use in recent years include: requiring purchase of certified systems; creating standards and requiring their use to exchange data; creating or designating a state-level health information exchange; mandating purchase of HIT; tying facility licensure to health IT system implementation; linking medical school loan repayment to health IT competency; offering tax credits to providers who purchase electronic medical records; offering incentive payments for electronic health records use; providing targeted reimbursement; and leveraging state employee health plan.

Conclusion

The passage of ARRA provides several opportunities to accelerate the development and use of HIT among California providers and consumers. Almost all states have enacted some form of HIT legislation and have promoted efforts to expand HIT use. HIT deployment will be an evolving effort as new companies, technologies, services and applications surface to respond to the incentives and demand for using information technology to improve care. Consumers may become an increasing focal point for HIT as more companies seek to provide more robust personal health records. California, as well as other states, will need to more clearly define its role in the promotion, expansion, and oversight of health information technology in the health care arena.