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Health Information Technology: Promoting Electronic Connectivity in Healthcare

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Summary

The Institute of Medicine, the National Committee on Vital and Health Statistics, and other expert panels have identified information technology (IT) as one of the most powerful tools for reducing medical errors, lowering health costs, and improving the quality of care. However, the U.S. health care industry lags far behind other sectors of the economy in its investment in IT, despite growing evidence that electronic information systems can play a critical role in addressing the many challenges the industry faces. Adoption of health IT systems faces significant financial, legal, and technical obstacles.

Congress and the Administration have taken a number of important steps to promote health IT. The 2003 Medicare Modernization Act instructed the HHS Secretary to adopt electronic prescription standards and establish a Commission for Systemic Interoperability. The Commission is charged with developing a comprehensive strategy for implementing data and messaging standards to support the electronic exchange of clinical data. On April 27, 2004, President Bush called for the widespread adoption of interoperable electronic health records (EHRs) within 10 years and established the position of National Coordinator for Health Information Technology. Pursuant to the President's order, the National Coordinator has developed a strategic 10-year plan outlining steps to transform the delivery of health care by adopting EHRs and developing a National Health Information Infrastructure (NHII) to link such records nationwide.

The strategic plan identifies several potential policy options for providing incentives for EHR adoption. They include: providing grants to stimulate EHRs and regional information exchange systems; offering low-rate loans and loan guarantees for EHR adoption; amending federal rules (e.g., Medicare physician self-referral law) that may unintentionally impede the development of electronic connectivity among health care providers; and using Medicare reimbursement to reward EHR use.

Health IT has broad bipartisan support among lawmakers. The 109th Congress is likely to consider legislation to boost federal investment and leadership in health IT and provide incentives both for EHR adoption and for the creation of regional health information networks, which are seen as a critical step towards the goal of interconnecting the health care system nationwide. Several health IT bills were introduced during the last Congress and, to date, two bills (H.R. 747, S. 16) have been introduced this year. Congress laid the groundwork for establishing an NHII when it enacted the 1996 Health Insurance Portability and Accountability Act (HIPAA). HIPAA instructed the HHS Secretary to develop privacy standards to give patient more control over the use of their medical information, and security standards to safeguard electronic patient information against unauthorized access, use, or disclosure.

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Health Information Technology: Promoting Electronic Connectivity in Healthcare

Introduction

The Institute of Medicine (IOM), the National Committee on Vital and Health Statistics (NCVHS), and other expert panels have identified information technology (IT) as one of the most powerful tools for reducing medical errors, lowering health costs, and improving the quality of care.[1] They recommend that health care organizations adopt IT systems to support the electronic collection and exchange of patient information. The goal is for these systems to operate seamlessly as part of a national health information infrastructure (NHII), which would enable health care providers anywhere in the country to access patient information at the point of care. While supporting the delivery of high-quality patient care, experts emphasize that a NHII must also meet the nation's needs for public health surveillance, biodefense, and biomedical research, and protect the privacy of individuals.

The U.S. health care industry lags well behind other sectors of the economy in its investment in IT, despite growing evidence that electronic information systems can play a critical role in addressing the many challenges the industry faces. There are significant financial, legal, and technical obstacles to the adoption of health IT systems. The issue for Congress, in which there is broad bipartisan support for health IT, is how best to create incentives for the adoption of IT throughout the health care industry.

Congress and the Administration have already taken a number of important steps to promote health IT. The 2003 Medicare Modernization Act instructed the HHS Secretary to adopt electronic prescription standards and establish a Commission for Systemic Interoperability. The Commission is charged with developing a comprehensive strategy for implementing data and messaging standards to support the electronic exchange of clinical data. On April 27, 2004, President Bush called for the widespread adoption of interoperable electronic health records (EHRs) within 10 years and established the Office of the National Coordinator for Health Information Technology (ONCHIT). ONCHIT has developed a strategic 10-year plan outlining steps to transform the delivery of health care by adopting EHRs and developing a National Health Information Infrastructure (NHII) to link such records nationwide. The strategic plan identifies several potential policy options for

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[1]U.S. Department of Health and Human Services, *Information for Health: A Strategy for Building the National Health Information Infrastructure,* Report and Recommendations from the National Committee on Vital and Health Statistics, Nov. 15, 2001, available online at [http://www.ncvhs.hhs.gov]; and, Institute of Medicine, *Crossing the Quality Chasm: A New Health System for the 21st Century,* Washington, DC: National Academy Press, 2001.

providing incentives for EHR adoption. They include: providing grants to stimulate EHRs and regional information exchange systems; offering low-rate loans and loan guarantees for EHR adoption; amending federal rules (e.g., Medicare physician self-referral law) that may unintentionally impede the development of electronic connectivity among health care providers; and using Medicare reimbursement to reward EHR use.

Lawmakers in the 109th Congress are likely to consider legislation to boost federal investment and leadership in health IT and provide incentives both for EHR adoption and for the creation of regional health information networks, which are seen as a critical step towards the goal of interconnecting the health care system nationwide. Congress laid the groundwork for establishing an NHII when it enacted the 1996 Health Insurance Portability and Accountability Act (HIPAA). HIPAA instructed the HHS Secretary to develop privacy standards to give patients more control over the use of their medical information, and security standards to safeguard electronic patient information against unauthorized access, use, or disclosure.

This report summarizes recently proposed and enacted legislation to promote the use of EHRs and the development of the NHII. It begins with a brief discussion of some of the benefits of broadening the application of information technology (IT) in health care, as well as the significant financial, technical, and legal barriers to the adoption of health IT. That is followed by a summary of the goals articulated in the federal government's strategic framework for health IT adoption. The report concludes with a set of tables summarizing health IT legislation in the 108th and 109th Congresses. **Appendix A** provides additional background information on health IT, including a list of congressional hearings, GAO reports, and online resources.

Information Technology and Health Care Quality

In its June 2004 report, *Revolutionizing Health Care Through Information Technology,* the President's Information Technology Advisory Committee (PITAC) proposed a framework for a NHII composed of four elements.[2]

Electronic Health Record (EHR)

The EHR provides a clinician with real-time access to patient information, as well as a complete longitudinal record of care. A fully integrated EHR enables a physician to update clinical and other information about a patient on a continuous basis. Such an integrated system permits a physician, for example, to view a history of the patient's medical condition and visits to health providers (with submenus for notes from those visits), images and reports of diagnostic procedures, current medications, functional status and social service eligibility, schedule of preventive services, allergies, and contact information for family caregivers.

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[2]Report can be obtained at [http://www.nitrd.gov/pitac].

Clinical Decision Support (CDS)

Linking a patient's EHR to a computerized CDS system provides clinicians with real-time diagnostic and treatment recommendations. CDS systems, which include a range of technologies from simple clinical alerts and warnings of prescription drug interactions to detailed clinical protocols and procedures, facilitate the practice of evidence-based medicine by providing clinicians with state-of-the-art medical knowledge at the point of care.

Computerized Physician Order Entry (CPOE)

CPOE minimizes handwriting and other communication errors by having physicians and other providers enter orders into a computer system. Originally designed for ordering medications, more advanced CPOE systems include orders for x-rays and other diagnostic procedures, referrals, discharges, and transfers. CPOE may also be linked to a patient's EHR and various decision support functions.

Health Information Exchange

The final and most important element of a NHII is electronic connectivity (via the Internet and other networks) enabling health care providers to exchange patient health information. Networks that permit electronic communication among providers must be secure in order to safeguard the information from unauthorized access, use, and disclosure. They also require the development of data and messaging standards to establish the critical goal of interoperability, that is, the ability of two or more IT systems (computers, networks, software, and other IT components) to communicate with one another and make sense of the data they exchange. A small but growing number of communities and health care systems around the country have developed EHRs and established secure platforms for the exchange of health data among providers, patients, and other authorized users (e.g., the Veterans Health Administration, the Indiana Network for Patient Care, the Santa Barbara County Care Data Exchange, and the New England Healthcare Electronic Data Interchange Network).

The IOM's March 2001 report on health care quality, *Crossing the Quality Chasm: A New Health Care System for the 21st Century,* emphasized the need for improvement in six key areas: safety, effectiveness, responsiveness to patients, timeliness, efficiency, and equity. A growing number of published studies suggest that IT can play a key role in improving the quality of care in each of these areas. In the area of safety, CPOE systems with decision support functions can reduce errors in drug prescribing and dosing. Clinical decision support systems have been shown to improve efficiency, for example, by reducing redundant lab tests. They can also improve the effectiveness of care by promoting compliance with clinical practice guidelines. Health IT may be especially beneficial for inner-city and rural populations and other medically underserved areas. Real-time access to specialty information, including consultations between rural physicians and leading specialists at academic medical centers, helps promote an equitable health care system by reducing the geographic variability in access to the best quality care. The secure transmission of patient information among physicians will significantly improve the

coordination of care among the 60 million Americans with multiple chronic conditions. Studies have shown that poor coordination of care among Medicare beneficiaries with multiple chronic conditions leads to unnecessary hospitalization, duplicate tests, conflicting clinical advice, and adverse drug reactions as a result of over-medication.

An IT infrastructure has great potential to contribute to achieving other important national objectives, such as homeland security and improved public health services. Linked health information networks are key to reducing the time it takes to detect and respond to disease outbreaks, whether they are naturally occurring or the result of a bioterrorist attack. They are also an important tool for helping organize and execute large-scale vaccination campaigns and for monitoring the health of the population. Finally, health IT is becoming increasingly important for various forms of biomedical and health services research, and for translating research findings into clinical practice more quickly. By some estimates it may take as long as 17 years for new research findings to be fully integrated into general medical practice.[3]

Barriers to the Adoption of Health IT

The U.S. health care industry, which represents about 15% of GDP, lags far behind other sectors of the economy in its investment in IT, despite growing evidence that electronic information systems can play a critical role in addressing many of the challenges the industry faces. There are significant obstacles to the adoption of EHRs and the creation of a NHII, some of which are briefly discussed below.

Standards

Enormous amounts of data needed for clinical care, patient safety, and quality improvement currently reside on computers. However, EHRs and community-based health information networks have been slow to develop because of a lack of interoperability standards to support electronic data exchange. Physicians and other providers are hesitant to invest in IT systems, fearing that they might not be able to exchange patient information with local pharmacies, hospitals, or even other physicians. Common standards for organizing, representing, and encoding health information permit the efficient exchange of clinical and patient safety data. They also support the assimilation of external data sources into decision support tools for providers (e.g., alerts for possible drug-drug interactions).

The federal government is playing a leading role in encouraging the development and adoption of interoperability standards for health information throughout the U.S. health care system. The Departments of Health and Human Services (HHS), Defense (DOD), and Veterans Affairs (VA) are partners in the Consolidated Health Informatics (CHI) initiative, one of 24 eGov initiatives to

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[3]E. Andrew Balas and Suzanne A. Boren, "Managing Clinical Knowledge for Health Care Improvement," in *Yearbook of Medical Informatics 2000: Patient-Centered Systems,* pp. 65-70.

support President Bush's Management Agenda. The goal of the CHI initiative is to establish federal health information interoperability standards both to promote information sharing across the three federal departments that deliver health care services and to serve as a model for the private sector. To date, the agencies have adopted 20 sets of standards developed by private-sector Standards Development Organizations (SDOs). They include messaging standards, standards for the electronic exchange of clinical lab results, standards for retail pharmacy transactions, and standards for the retrieval and transfer of images and associated diagnostic information. HHS has also signed an agreement to license Systematized Nomenclature of Medicine — Clinical Terms (SNOMED CT), a standardized medical vocabulary developed by the College of American Pathologists and available for free to users in the United States. SNOMED CT, which is now available through the National Library of Medicine,[4] is the most comprehensive clinical vocabulary available and covers most aspects of clinical medicine. It will help structure and computerize the medical record and reduce variability in the way the data are captured, encoded and used for clinical care of patients and for medical research.

In May 2003, HHS requested that the IOM provide guidance to the agency on a set of basic "functionalities" that an EHR should possess, that is, the types of information that should be available to providers when making clinical decisions (e.g., diagnoses, allergies, lab results), and the types of decision-support capabilities that should be present (e.g., alerts to potential drug-drug interactions)." The IOM did not address specific data standards (e.g., terminology, messaging standards, diagnostic codes). Health Level Seven (HL7), a leading SDO working on the development of an EHR standard, has taken the core functionalities identified by the IOM and incorporated them into its draft standard, which has been approved and is undergoing a two-year trial before it becomes an official standard.[5]

Coordinating the care a patient receives from multiple providers does not require the transmission of the entire EHR with each referral. In most cases the physician to whom a patient is referred needs only the most relevant and timely facts about the patient's condition. ASTM International, in collaboration with the Massachusetts Medical Society, the Health Information Management and Systems Society, and the American Academy of Family Physicians, is developing the Continuity of Care Record (CCR) to meet that need. The CCR is intended to be a national standard for all relevant information necessary for continuity of care. It consists of a minimum data set that includes provider information, insurance information, patient's health status (e.g., allergies, medications, vital signs, diagnoses, recent procedures), recent care provided, as well as recommendations for future care and reasons for referral or transfer. The data contained within the CCR are a subset of the patient's full record that exists in an EHR. Each new provider that sees the patient is able to access the CCR and update the information as necessary. Thus the CCR provides a vehicle for exchanging clinical information among

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[4]SNOMED CT is available online at [http://umlsinfo.nlm.nih.gov].

[5]Information on the HL7 EHR standard is available online at [http://www.hl7.org/ehr].

providers, institutions, or other entities. It may also be used by the patient as a brief summary of recent care.[6]

Congress laid the groundwork for establishing an NHII when it enacted the HIPAA, P.L. 104-191 in 1996. HIPAA instructed the HHS Secretary to issue electronic format and data standards for several routine administrative transactions between health care providers and health plans (e.g., reimbursement claims) and adopt security standards to safeguard electronic patient information against unauthorized access, use, or disclosure. Developing a secure platform to protect confidential health data is central to the growth of an NHII. Under HIPAA, HHS has also issued health privacy standards that give individuals the right of access to their medical information and prohibit plans and providers from using or disclosing such information without the patient's authorization, except for routine health care operations and other specified purposes. The growing use and exchange of electronic health data raises serious privacy concerns among the public and some lawmakers, who question whether the privacy standards are sufficiently broad in scope to protect confidential patient information.

Financial Challenges

There are two key financial obstacles to the adoption of EHR and the development of an NHII: investment costs, and the misalignment between costs and benefits. Investment in IT is expensive and must compete with other priorities, including new buildings as well as other technologies with more direct application to clinical care and greater certainty for increased revenues. A full clinical IT system that includes CPOE and an EHR, coupled with clinical decision support functions, can cost tens of millions of dollars for a large hospital. And that does not include the costs of training and systems support.

The start-up and maintenance costs of IT systems may be especially burdensome for small physician practices. While those costs vary tremendously, depending on the nature of the practice and the applications involved, the average cost of an EHR can range from $16,000 to $36,000. The complexity of the technology, the time to complete implementation, and the changes in office workflow patterns create additional barriers to adopting IT systems. But perhaps the most critical issue for physicians is the perception that the IT-related benefits of improved efficiency and quality of care accrue largely to the payers and patients, not to the providers who bear most of the implementation costs.

Rather than reward quality, most physician reimbursement systems emphasize volume of services. Physicians are paid for each procedure or service they provide, regardless of its quality. This approach encourages providers to see as many patients as possible and to emphasize the provision of a billable service, such as an MRI, over technology that might improve the quality of many services. A physician group that invests in a clinical IT system to improve the way it manages the care of patients with chronic conditions can reduce the number of complications and the hospitalization

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[6]For a more detailed discussion of the development of the CCR, go to [http://www.astm.org/COMMIT/E31_ConceptPaper.doc].

rate. But unless the change results in additional office visits, only the payer sees a financial benefit. One potential solution to this problem is to provide direct payments to physicians who use IT systems. Another is to adopt a pay-for-performance scheme that rewards clinicians who deliver the best quality of care, according to standardized measures, as opposed to the highest volume of care.

Legal Barriers

Health IT experts have identified several federal laws that may unintentionally impede the development of electronic connectivity in health care. Because these laws do not directly address health IT, health care providers are uncertain about what would constitute a violation or create the risk of litigation. The Medicare physician self-referral (Stark) law (42 U.S.C. § 1395nn) and the anti-kickback law (42 U.S.C. § 1320a-7b(b)), which covers all federal health care programs, are of chief concern. Both are intended to counter fraud and abuse.[7]

The Stark law prohibits physicians from referring patients to any entity for certain health services if the physician has a financial relationship with the entity, and prohibits entities from billing for any services resulting from such referrals, unless an exception applies. The law discourages physicians from accepting IT resources (e.g., hardware and software) from a hospital or other health care entity out of concern that they would be in violation if they subsequently referred patients to that entity. The anti-kickback law, like the self-referral law, also impedes arrangements between health care entities that promote the adoption of health IT. It prohibits an individual or entity from knowingly or willfully offering or accepting remuneration of any kind to induce a patient referral for or purchase of an item or service covered by any federal health care program.

On March 26, 2004, the Centers for Medicare and Medicaid Services (CMS) published a final interim rule creating several new exceptions under the physician self-referral law, including one for IT items and services furnished to physicians to enable them to participate in "community-wide health information systems."[8] Experts have questioned whether this term is sufficiently inclusive to cover all the various health IT arrangements. They have also criticized the lack of a parallel exception under the anti-kickback law.

National Framework for Strategic Action

On April 27, 2004, President Bush called for the widespread adoption of interoperable EHRs within 10 years and signed Executive Order 13335, which established the position of National Coordinator for Health Information Technology

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[7]The Government Accountability Office (GAO) discussed various potential legal obstacles to health IT in its recent report *HHS's Efforts to Promote Health Information Technology and Legal Barriers to Its Adoption,* GAO-04-991R, Aug. 13, 2004, available online at [http://www.gao.gov].

[8]69 *Federal Register* 16053, Mar. 26, 2004.

within HHS. Secretary Tommy Thompson appointed David Brailer, MD, PhD, one of the country's foremost health IT experts, to serve in the new position. The Executive Order directed the National Coordinator within 90 days to develop a strategic 10-year plan outlining steps to transform the delivery of health care by adopting EHRs and developing a NHII to link such records nationwide.

On July 21, 2004, Brailer and Thompson released a Framework for Strategic Action entitled, *The Decade of Health Information Technology: Delivering Consumer-Centric and Information-Rich Health Care.*[9] Although the federal government has taken the lead in setting the health IT agenda, the framework sets out a bottom-up approach in which the role of HHS is to promote and encourage the private sector to build community-level networks. Adopting interoperability standards will over time permit these local networks to connect with one another to form an NHII. The framework identified four major goals, with strategic action areas for each:

- *Inform clinical practice*. This goal focuses on bringing EHRs into clinical practice by providing incentives for EHR adoption, reducing the risk of EHR investment, and promoting EHR diffusion in rural and medically underserved areas.

- *Interconnect physicians*. This goal centers on building an interoperable health information infrastructure so that EHRs follow the patient, and clinicians have access to critical health information when treatment decisions are being made. The strategies for realizing this goal involve fostering community-based health information exchange projects, developing a national health information network, and coordinating federal health information systems.

- *Personalize health care*. This goal involves using health IT to help individuals manage their own wellness and become more involved in personal health decisions.

- *Improve population health*. The final goal requires the timely collection, analysis, and dissemination of clinical information to improve the evaluation of health care delivery, public health monitoring, and biosurveillance. It also helps accelerate research and the translation of research findings into clinical products and practice.

The framework identifies several potential policy options for providing incentives for EHR adoption. They include:

- regional grants and contracts to stimulate EHRs and community information exchange systems;
- improving the availability of low-rate loans for EHR adoption;
- updating federal rules on physician self-referral that may unintentionally restrict the development of health information networks;

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[9]The strategic plan, along with an accompanying fact sheet and press release, is available online at [http://www.hhs.gov/onchit/framework].

- using Medicare reimbursements to reward the use of EHRs; and
- funding Medicare pay-for-performance demonstration programs.

Health IT Legislation (108th and 109th Congress)

The Medicare Prescription Drug, Improvement, and Modernization Act (MMA), which the President signed into law on December 8, 2003 (P.L. 108-173), included provisions for electronic prescribing standards. The bill requires the standards to include not just electronic script writing, but also the patient's medication history and decision support for identifying potential drug-to-drug interactions. In addition, the MMA called for the establishment of a commission to develop a comprehensive strategy for the adoption and implementation of health IT data standards. Finally, the bill authorized IT grants for physicians and established demonstration projects to determine how to improve the quality of care through the adoption of IT. **Table 1**, beginning on page 10, provides a summary of the IT-related provisions in the MMA.

In the 108th Congress, the House and Senate passed competing versions of the Patient Safety and Quality Improvement Act (H.R. 663, S. 720). Despite broad bipartisan support for the legislation, no further action took place before adjournment in December 2004. On March 9, 2005, the Senate Committee on Health, Education, Labor, and Pensions (HELP) unanimously approved a new patient safety bill (S. 544), which is identical to last year's Senate-passed measure. The patient safety legislation is intended to encourage the voluntary reporting of information on medical errors by establishing federal evidentiary privilege and confidentiality protections for such information. For more information on the patient safety legislation, see CRS Report RL31983, *Health Care Quality: Improving Patient Safety by Promoting Medical Errors Reporting.*

S. 544 also requires the HHS Secretary to adopt voluntary, national interoperability standards for the electronic exchange of health care information. H.R. 663, in the 108th Congress, contained a similar requirement, as well as several additional health IT provisions, none of which are included in S. 544. The House-passed bill authorized health IT grants for physicians and hospitals, and mandated the creation of a Medical Information Technology Advisory Board (MITAB).

During the 108th Congress, lawmakers introduced a number of bills (i.e., H.R. 2915, H.R. 4880, S. 2003, S. 2421, S. 2710, S. 2907) to boost federal investment and leadership in IT in an effort to promote the adoption of EHRs and the development of a NHII. With the exception of H.R. 2915, these measures also contained quality-of-care provisions. They included devising standardized measures of physician performance and using them as the basis of pay-for-performance initiatives. So far in the 109th Congress, lawmakers have introduced two health IT bills. Representative Gonzalez has introduced the National Health Information Incentive Act of 2005 (H.R. 747), and Senator Kennedy has reintroduced S. 2907 as Title II of the Affordable Health Care Act (S. 16). **Table 2**, beginning on page 12, compares the incentives in each of those health IT bills. **Tables 3** and **4** provide more detailed summaries of the major provisions in the patient safety and health IT bills introduced in the 108th and 109th Congresses, respectively.

Table 1. Summary of Health Care Information Technology (IT) Provisions in the Medicare Modernization Act (P.L. 108-173)

Electronic Prescription Standards (Section 101)	Requires the Secretary to develop standards for the electronic prescribing of newly covered drugs under Part D (to begin January 1, 2006). The standards must provide for the transmittal of information on eligibility and benefits (including formulary drugs), information on the drug being prescribed and other drugs listed in the patient's medication history (including drug-drug interactions), and information on the availability of lower-cost, therapeutically appropriate alternative drugs. Additionally, the standards must accommodate the messaging of information about appropriate prescribing of drugs to avoid adverse drug interactions and allow a beneficiary (consistent with their prescription drug plan) to designate a particular pharmacy to dispense a prescribed drug. Finally, the program must provide for the electronic transmittal of the patient's medical history. Disclosure of information must meet the requirements of the HIPAA privacy rule and, to the extent feasible, be on an interactive, real-time basis. Requires the Secretary to promulgate initial standards by September 1, 2005. Prior to the promulgation of final standards, the Secretary must enter into voluntary agreements with physicians and pharmacies to conduct a pilot project during 2006 to test the initial standards. The Secretary must then evaluate the pilot project and report to Congress not later than April 1, 2007. Based on the evaluation and not later than April 1, 2008, the Secretary must promulgate final standards to take effect within one year. Also, requires the Secretary to establish a safe harbor from penalties under the anti-kickback statute (42 U.S.C. 1320a–7b(b)) and an exception to Medicare limitations on physician self-referral (42 U.S.C. § 1395nn(e)) for the provision of hardware, software, and other technology and training services used in electronic prescribing. That would allow, for example, a hospital to provide such technologies and services to its medical staff, and Medicare Advantage plans to provide such technologies and services to pharmacies and prescribing health care providers. [Note: CMS, ahead of schedule, released its proposal for e-prescribing standards on January 27, 2005. The proposed rule was published in the *Federal Register*, February 4, 2005.]
Grants to Physicians to Implement Electronic Prescription Programs (Section 108)	Authorizes the Secretary to make grants to physicians to help defray the costs of purchasing and installing computer systems (including handheld devices), upgrading existing systems, and providing education and training to staff on the use of technology to implement an electronic prescription program. Requires the Secretary to give preference to physicians who serve a disproportionately large Medicare population, as well as physicians who serve rural or medically underserved areas. Requires grantees to provide a 50% matching contribution to cover all the costs of implementing their electronic prescribing program. Authorizes $50 million for FY2007, and such sums as may be necessary for FY2008 and FY2009.
Medicare Care Management Performance Demonstration (Section 649)	Requires the Secretary to establish a three-year demonstration program with physicians to meet the needs of beneficiaries through the adoption and use of health IT and evidence-based outcome measures to promote continuity of care, help stabilize medical conditions, prevent or minimize acute exacerbations of chronic conditions, and reduce adverse health outcomes. Authorizes four demonstration sites: two urban, one rural, and one in a state that meets certain specifications (most likely Arkansas). Physicians must meet certain practice standards, including the ability to establish and maintain health IT systems. Directs the Secretary to pay a per beneficiary amount to each participating physician who meets or exceeds specific performance standards regarding clinical quality and outcomes.

Chronic Care Improvement Under Medicare Fee-for-Service (Section 721)	Requires the Secretary to develop, test, implement and evaluate a chronic care improvement program (CCIP) to improve the quality of care for beneficiaries living with chronic illnesses by helping them manage their conditions and encouraging better coordinated care. Instructs the Secretary within 12 months to enter into initial three-year contracts with various chronic care improvement organizations, including disease management organizations, health insurers, physician group practices and other entities the Secretary deems appropriate. Required elements of a chronic care improvement plan include the use of monitoring technologies that enable patient guidance through the use of decision support tools, and the development of a clinical information database to track and monitor each participant across settings and evaluate outcomes. Requires independent evaluation of the initial contracts based on the following factors: quality improvement measures; beneficiary and provider satisfaction; health outcomes; and financial outcomes (including cost savings). Subsequent to the evaluation, the Secretary can expand the CCIP or choose to implement the program on a national basis. Expansion cannot begin earlier than two years after the initial program is undertaken and not later than six months after the initial program is completed. Authorizes such sums as may be necessary for the CCIP, not to exceed $100 million over three years. Information on the CCIP is available at [http://www.cms.hhs.gov/medicarereform/ccip].
Commission on Systemic Interoperability (Section 1012)	Requires the Secretary to establish a Commission on Systemic Interoperability to develop a comprehensive strategy for the adoption and implementation of health care IT standards. Members of the Commission are to be appointed by the President, the Senate Majority and Minority Leaders, and the House Speaker and Minority Leader. In developing its strategy, the Commission must consider the costs and benefits of the standards, the current demand on industry resources to implement these and other electronic standards, and the most cost-effective and efficient means of implementation. The Commission must report to the Secretary and Congress by October 31, 2005. The Commission's website is at [http://www.nlm.nih.gov/csi/csi_home.html].

Table 2. Comparison of Bills to Encourage the Adoption of Health Information Technology (IT)

108th Congress			
	H.R. 4880 (Kennedy, P.)	**S. 2003 (Clinton)**	**S. 2710 (Gregg)**
Federal coordination and leadership	Requires the Secretary to provide technical assistance on the creation of regional health information infrastructures.	Establishes an HHS Office of National Healthcare Information Infrastructure to develop a NHII strategic plan.	Establishes an HHS Office of Health Information Technology to advise the Secretary, direct all IT activities within HHS, and implement a NHII strategic plan.
Interoperability standards	Directs the Secretaries of HHS, DOD, and VA, based on the recommendations of a working group, to adopt health IT standards.	Directs the Secretary to adopt national, voluntary health IT standards.	Directs the Office to adopt national, voluntary health IT standards.
Grants, loans, and loan guarantees	Authorizes $55 million for FY2005, and $167 million for each of FY2006-FY2008, for grants to establish regional health information infrastructures. Authorizes $400 million each year for FY2009-FY2013 to maintain/upgrade existing networks and establish new ones. Authorizes loans to provide additional funding to grantees.	Authorizes $20 million for each of FY2004 and FY2005 for grants to hospitals and other providers to pay for health IT systems. Requires 50% matching funds.	Authorizes $50 million each year for FY2005-FY2010 for grants to establish local health information infrastructures and to purchase health IT systems. Requires 20% matching funds. Authorizes the same amount for loan guarantees for the same purposes.
Federal reimbursement	Directs the Secretary to adjust Medicare payments to providers who use health IT and to provide matching Medicaid payments to states that fund regional health IT networks.	No provisions.	Requires a review of federal reimbursement for providers that utilize health IT systems.
Insurance mandates	No provisions.	No provisions.	No provisions.
Legal barriers	Creates a safe harbor from penalties under the anti-kickback statute and an exception to Medicare limitations on physician self-referral for the provision of health IT equipment and services.	No provisions.	No provisions.
Research	No provisions.	Instructs AHRQ and NIH to conduct and support research on the use of IT in improving health care.	No provisions.

	108th Congress	109th Congress	
	S. 2421, Title I (Kennedy)	**H.R. 747 (Gonzalez, C.)**	**S. 16, Title II (Kennedy)**
Federal coordination and leadership	No provisions.	Establishes an Office of the National Coordinator for Health Information Technology within the Executive Office of the President to be headed by a Director who reports directly to the President.	Establishes an Office of Health Information Technology within the Executive Office of the President to advise the President, direct all health IT activities within the federal government, and implement a NHII strategic plan.
Interoperability standards	Directs the Secretary to adopt national health IT standards.	Directs the Secretary to adopt and test national health IT standards.	Directs the Office to adopt national, voluntary health IT standards.
Grants, loans, and loan guarantees	Authorizes such sums as may be necessary for grants, loans, and loan guarantees to install and implement clinical IT systems that meet national standards. Requires 10% matching funds for grants to community health centers, and 20% matching funds for grants to other non-profit health care facilities and for physician practices.	Authorizes such sums as may be necessary for grants and revolving loans for small health care providers to acquire EHRs and other health IT. Creates a tax credit for physicians who acquire EHRs and other health IT, equal to 10% of the amounts paid during the taxable year.	Authorizes such sums as may be necessary for FY2006-FY2011 for grants and loan guarantees to establish local health information infrastructures and to purchase health IT systems. Requires 20% matching funds for IT grants.
Federal reimbursement	Mandates increases in federal health program reimbursement for providers who implement clinical IT systems consistent with national standards and who carry out quality improvement activities. Mandates decreases in reimbursement for providers who fail to meet those requirements.	Instructs the Secretary to provide Medicare payment incentives to help small providers acquire EHRs and other health IT, such as add-on payments for office visits supported by health IT, and payments for e-mail consultations.	Mandates recommendations and an implementation plan for changes to federal reimbursement and payment structure to promote the adoption of health IT.
Insurance mandates	Requires group health plans and insurers to implement computerized systems for claims processing (with real-time detection of fraud and abuse), and for making information about benefits and claims available to patients electronically. Requires the Secretary to establish pay-for-performance standards and provides for health care payers to increase payments to providers that meet the standards.	No provisions.	No provisions.
Legal barriers	No provisions.	No provisions.	No provisions.
Research	No provisions.	No provisions.	No provisions.

Table 3. Summary of Health Information Technology (IT) Legislation Introduced in the 108th Congress

Bills passed by the House and Senate	
Patient safety: reporting medical errors	**H.R. 663 (Bilirakis) Patient Safety and Quality Improvement Act.** On March 12, 2003, the House passed H.R. 663 (H.Rept. 108-28) on a vote of 418-6. H.R. 663 was intended to encourage the voluntary reporting and analysis of medical errors by protecting such information from legal discovery and admission in civil and administrative proceedings, and from Freedom of Information Act (FOIA) requests.[a] The bill would have required the Agency for Healthcare Research and Quality (AHRQ) to certify patient safety organizations (PSOs) to collect and analyze information reported by health care providers. PSOs would then develop and disseminate recommendations for systems-based solutions to improve patient safety and health care quality. H.R. 663 also would have required AHRQ to develop voluntary national standards to promote the interoperability of health IT systems. In addition, the bill would have authorized grants to physicians and hospitals for electronic prescribing and other information technology to prevent errors. Finally, H.R. 663 would have created a Medical Information Technology Advisory Board to make recommendations to HHS and Congress on fostering the development and use of health IT to reduce medical errors. **S. 720 (Jeffords) Patient Safety and Quality Improvement Act.** On July 23, 2003, the Senate Health, Education, Labor, and Pensions (HELP) Committee approved S. 720 (S.Rept. 108-196), which was broadly similar to the House measure. On July 22, 2004, the Senate took up H.R. 663, struck the language approved by the House and substituted it with an amended version of S. 720, then passed the measure by unanimous consent. Unlike H.R. 663 as passed by the House, the Senate version did not include health IT grants or the establishment of a Medical Information Technology Advisory Board. There was no further action on patient safety legislation in the 108th Congress. For more information, see CRS Report RL31983, *Health Care Quality: Improving Patient Safety by Promoting Medical Errors Reporting*.
Introduced Bills (No legislative activity)	
Medicare IT grants	**H.R. 3035 (Houghton), S. 1729 (Graham, B.) Medication Error Reduction Act.** Authorizes grants to hospitals and Medicare nursing homes, known as skilled nursing facilities (SNFs), to purchase or improve computerized systems that help reduce medication errors, and to provide education and training to staff on patient safety programs. The bill sets aside 20% of the funds for rural providers. Hospitals and SNFs whose patient populations include a high percentage of Medicare, Medicaid, and SCHIP beneficiaries are to be given special consideration when awarding grants. Grant awards may not exceed $750,000 for hospitals, and $200,000 for SNFs. Authorizes appropriations from the Medicare Part A Trust Fund of $93 million per year for FY2004-FY2013 for making grants to hospitals, and $4.5 million per year over the same period for making grants to SNFs.
National Health Information Infrastructure (NHII), health IT standards	**H.R. 2915 (Johnson, N.) National Health Information Infrastructure Act.** Instructs the Secretary to appoint a National Health Information Officer for a five-year term to provide national leadership for the development of a NHII. Requires the Officer, within six months, to develop a NHII strategic plan, followed by an assessment of best practices in the development and purchase of medical IT, as well as recommendations for health data standards to achieve interoperability of health IT systems. Directs the Secretary, based on those recommendations, to adopt voluntary, national health data and communications standards.

Health IT grants and loans, standards, legal safe harbor, Medicare reimbursement, Medicaid federal match, cost-effectiveness research, outcomes and quality, practitioner performance	**H.R. 4880 (Kennedy, P.) Quality, Efficiency, Standards, and Technology for Health Care Transformation Act.** (1) Authorizes the Secretary to award up to 20, four-year "Phase I" grants to health information infrastructure organizations to develop and implement an interoperable health information network, based on a regional health IT plan approved by the Secretary. Authorizes the Secretary, after four years, to award "Phase II" grants to states that agree to fund such organizations to maintain and upgrade existing networks and develop new ones. Authorizes the Secretary, after four more years, to award "Phase III" maintenance grants to states in which at least 75% of health care providers are participating in a network. Requires the Secretary to provide technical assistance on the creation of health information infrastructures and directs AHRQ to establish a national technical assistance center to help physicians (especially in small practices) adopt health IT and participate in regional networks. Requires the Secretary to establish a program for certifying regional health information infrastructures. Authorizes $55 million in FY2005, and $167 million for each of FY2006-FY2008 for Phase I grants; $400 million for each of FY2009-FY2013 for Phase II grants; and such sums as may be necessary for FY2014 and each subsequent fiscal year for Phase III grants. (2) Directs the Secretaries of HHS, DOD, and the VA, within one year and after considering the recommendations of a Working Group convened by the HHS Secretary, to adopt interoperability standards for health IT systems. Specifies the membership of the Working Group and requires it to formulate recommendations on: components of electronic medical records; clinical data exchange and terminologies; medical knowledge representation; computerized physician order entry; and privacy and security. Authorizes $5 million for FY2005 and for FY2006, and $2 million for FY2007 and each subsequent fiscal year. (3) Authorizes the Secretary to make loans to Phase I and Phase II grantees, with a repayment period of up to 10 years, to provide additional funding for activities covered under the grants. (4) Creates a safe harbor from penalties under the anti-kickback statute (42 U.S.C. §1320a-7b(b)) for equipment and services provided for developing or implementing a health information infrastructure under this Act, as long as the provision of such equipment and services is not based on the amount or value of business between the parties. (5) Creates an exception to Medicare limitations on physician self-referral (42 U.S.C. § 1395nn(e)) for equipment and services provided for developing or implementing a health information infrastructure under this Act, as long as the provision of such equipment and services is not based on the amount or value of business between the parties. (6) Instructs the Secretary to make adjustments in Medicare payments to providers who participate in a certified health information infrastructure, or who use IT to improve the quality and accuracy of clinical decisions. (7) Instructs the Secretary to make matching Medicaid payments to states that provide funding for an approved regional health IT plan. Mandates a 90% federal match during the first three years of such state funding. (8) Amends Section 1013 ("Outcomes Research") of the Medicare Modernization Act (see **Table 1**) to include research on cost-effectiveness, and to require that AHRQ adopt and implement the priorities established by the Consortium for Health Outcomes Research Priorities. Authorizes $150 million for FY2005, $250 million for FY2006, $400 million for FY2007, $750 million for FY2008, $1 billion for FY2009, and such sums as may be necessary for each fiscal year thereafter. (9) Directs AHRQ and the Institute of Medicine (IOM) to establish a Consortium for Health Outcomes Research Priorities. (10) Instructs AHRQ, in collaboration with the National Library of Medicine, to establish a Center for Clinical Decision-Support Technology to enable health care providers more efficiently and rapidly to embed knowledge-based elements in their clinical information systems. Authorizes $2 million for FY2005, and such sums as may be necessary for each fiscal year thereafter. (11) Instructs AHRQ to fund scholarships for study in health care quality and patient safety. Authorizes $2 million for FY2005, and such sums as may be necessary for each fiscal year thereafter. (12) Requires the Consortium, within one year, to identify priorities for developing, identifying, and endorsing standardized measures of health care provider performance. Requires the Consortium to update the priorities annually and have them endorsed by the National Quality Forum (NQF). (...continued)

	(13) Requires the Secretary, within 18 months, to establish a claims-based practitioner performance database (to be discontinued after 10 years) to receive de-identified Medicare claims data and de-identified claims data voluntarily submitted by group health plans (group health plans that submit such data are granted access to all recent Medicare claims data submitted to HHS). Requires the Secretary annually to use the data in the database to measure the performance of physicians and hospitals, based on NQF-endorsed performance measures. After four years, mandates that all group health plans submit de-identified claims data to the database. (14) Requires the Secretary, within 18 months, to establish a clinical-based practitioner performance database to receive de-identified data voluntarily submitted by providers. Requires the Secretary annually to use the data in the database to measure the performance of physicians and hospitals, based on NQF-endorsed performance measures. (15) Requires the Secretary to make publicly available the provider performance measurements prepared from both databases. (16) Authorizes the Secretary to use the provider performance measurements to make pay-for-performance adjustments to Medicare payments. Directs the Medicare Payment Advisory Commission to make annual recommendations on such pay-for-performance adjustments. (17) Directs AHRQ, within 54 months, to conduct a study comparing the two practitioner performance databases and report to Congress.
NHII, standards, health IT grants, chronic disease care, prescription drug effectiveness, quality measures, pay-for-performance, use of health information by providers and patients	**S. 2003 (Clinton) Health Information for Quality Improvement Act.** (1) Establishes an Office of National Healthcare Information Infrastructure, headed by a Director who reports directly to the Secretary, to develop an NHII strategic plan in collaboration with various stakeholders. (2) Instructs the Secretary within two years to adopt national, voluntary health data and communications standards to promote the interoperability of health IT systems. (3) Authorizes AHRQ to award grants to hospitals and other providers to pay for health IT. Establishes grantee reporting requirements and requires the Secretary to report to Congress on the grant program. Grantees must provide at least 50% matching funds. Authorizes $20 million for FY2004 and for FY2005. (4) Instructs AHRQ and NIH to establish a Medical Systems Safety Initiative to conduct and support research on the use of IT in improving and advancing health care. Requires the National Committee for Vital and Health Statistics to assist the Secretary in the development of authentication standards for health records. Requires the Secretaries of HHS, DOD, and VA to implement and evaluate methods that enable patients to access and append their electronic medical record. Directs AHRQ to award grants for research on innovative approaches to improve patients' understanding of their electronic health record. Authorizes $5 million for such grants for FY2004, and such sums as may be necessary for each fiscal year thereafter. (5) Prohibits group health plans and health insurers that offer coverage in both the group and individual markets from discriminating against individuals that participate in approved clinical trials, and from denying or limiting the coverage of routine patient costs for items and services furnished in connection with participation in such trials. (6) Directs AHRQ to award grants for research on primary care for older patients with multiple chronic conditions. Authorizes $10 million for FY2004, and such sums as may be necessary for each fiscal year thereafter. (7) Directs NIH, in coordination with AHRQ and FDA, to conduct research on the effectiveness of certain prescription drugs and provide a progress report to the President and Congress every two years. Authorizes $75 million for FY2004, and such sums as may be necessary for each fiscal year thereafter. (8) Requires AHRQ, in consultation with various specified stakeholders, to evaluate and update quality indicators for each of the IOM's 20 priority areas for improvement in health care quality.[b] Authorizes $12 million for FY2004, and $8 million for each fiscal year thereafter through FY2009. (9) Requires CDC and AHRQ jointly to award demonstration grants for the reporting of health care quality information at the community level. Authorizes $25 million for FY2004, and such sums as may be necessary for each fiscal year thereafter. (10) Requires AHRQ to conduct demonstration programs for the collection of reliable data on patient race, ethnicity, and linguistic preferences. Authorizes $5 million for FY2004 and for FY2005. (11) Mandates an IOM study on developing and disseminating evidence-based practice guidelines for health care. (12) Mandates an IOM study on performance-based payment incentives, including payment under Medicare. (13) Requires AHRQ to support research and demonstration programs on using community-based and voluntary public and private organizations to disseminate information about health care quality to consumers. Authorizes $4 million in FY2004, and $2 million for each fiscal year thereafter. (14) Requires AHRQ to award grants for research to promote patient engagement in their care.

Health IT standards and grants, reimbursement incentives, pay-for-performance standards, national quality advisory council, disease-specific grant programs, preventive health	**S. 2421 (Kennedy) Health Care Modernization, Cost Reduction, and Quality Improvement Act.** (1) Authorizes grants, loans, and loan guarantees for federally qualified health centers, hospitals, SNFs, group practices and other nonprofit health facilities to install and implement clinical IT systems that meet national interoperability and security standards. Matching funds are required to receive a grant: 10% for community health care centers; and 20% for other non-profit health care facilities and for group practices. Requires the Secretary, in consultation with various stakeholders, to develop or adopt national standards by January 1, 2006. Requires the Secretary by January 1, 2007, and annually thereafter, to review and consider modification of the standards. Authorizes such sums as may be necessary. (2) Mandates increases in federal health program reimbursement for providers who implement clinical IT systems consistent with the national standards, and who carry out quality improvement activities as defined in the Act. Increases begin in 2005 and are equal to 1% of reimbursement, decreasing to 0.2% of reimbursement in 2009. Mandates decreases in federal health program reimbursement for larger providers who fail to implement clinical IT systems and carry out such quality improvement activities. Decreases begin in 2010 and are equal to 0.2% of reimbursement, increasing to 1% of reimbursement in 2014. (3) Requires group health plans and health insurers that offer coverage in both the group and individual markets, by December 31, 2008, to implement computerized claims processing systems (with an accuracy of at least 99% and the ability in real time to detect fraud and abuse). Requires group health plans and insurers, by December 31, 2008, to adopt a computerized system that, among other things, provides consumers with information about their account and permits them to make deductible and cost-sharing payments electronically, and enables providers to receive claims payments electronically. (4) Requires the Secretary, within two years and in consultation with the National Quality Advisory Council (see below) and others, to establish quality standards for reimbursing health care providers (i.e., pay-for-performance standards). Requires payers to increase payments to providers who attain the quality standards, and permits payers to reduce reimbursement to providers who fail to meet the standards. If a provider believes it can provide higher quality care at lower cost but that doing so would reduce the amount of reimbursement that would otherwise be available to the provider, the payer involved is required to enter into good faith negotiations with the provider to reach agreement on an alternative payment system. (5) Authorizes CDC to award grants to states to implement a comprehensive plan for diabetes control and prevention. Authorizes CDC, in collaboration with AHRQ, to award grants to states to apply evidence-based best practices (identified by the Secretary) for diabetes care and prevention. Authorizes $50 million for FY2005, and such sums as may be necessary for FY2006-FY2009. Authorizes $15 million for FY2005, and such sums as may be necessary for FY2006-FY2009, to fund a national diabetes education program. (6) Authorizes such sums as may be necessary for FY2005-FY2009 to fund grants to states to implement a comprehensive arthritis control and prevention plan. Authorizes such sums as may be necessary for FY2005-FY2009 to fund grants to national public or private nonprofit entities to help implement a national arthritis control and prevention strategy. Authorizes such sums as may be necessary for the Secretary to implement a national arthritis education program. (7) Authorizes such sums as may be necessary for FY2005- FY2009 to fund grants to states to implement stroke care systems that provide high-quality prevention, diagnosis, treatment, and rehabilitation. (8) Authorizes grants and other programs to improve access to and the provision of culturally and linguistically appropriate care for patients whose primary language is not English. Requires the Secretary to provide additional Medicare payments for such culturally and linguistically appropriate services. Requires Medicaid and SCHIP programs to cover 90% of the costs of providing those services. (9) Establishes a 15-member National Quality Advisory Council, appointed by GAO, to identify national aims and objectives for health care quality improvement and make recommendations to Congress and the public. (10) Requires group health plans and health insurers that offer coverage in both the group and individual markets to cover preventive health care items and services, as recommended by the U.S. Preventive Services Task Force. (11) Authorizes such sums as may be necessary for FY2005-FY2010 to carry out various programs to (i) encourage health diets, and (ii) increase physical activity in schools, worksites, and communities. (12) Authorizes such sums as may be necessary for FY2005-FY2009 to carry out various programs to improve immunization rates for adults and adolescents. (13) Authorizes such sums as may be necessary for FY2005-FY2009 to carry out various programs to raise public awareness about oral health and to improve the delivery and quality of oral health among adults, including those with intellectual disabilities or chronic disease.

NHII, standards, health IT grants and loan guarantees, quality measures	**S. 2710 (Gregg) National Health Information Technology Adoption Act.** (1) Establishes within HHS an Office of Health Information Technology to: advise the Secretary on health IT; direct all health IT activity within the Department; work with public and private health IT stakeholders to implement a strategic plan for establishing a NHII; and ensure that health IT is utilized in health surveillance. Instructs the Secretary to appoint a Director to head the Office. Directs the Office to encourage the development and adoption of health IT standards and work with the private sector to collect and disseminate best health IT practices. Directs the Office to coordinate with AHRQ and other federal agencies to evaluate the costs and benefits of health IT, including its impact on the quality and efficiency of patient care, and review federal reimbursement for health care providers that utilize health IT systems. (2) Requires the Director, within two years and in collaboration with private sector stakeholders, to adopt national standards to enable health IT to be used in clinical settings, to promote the interoperability of clinical information across health care settings, and to facilitate the use of clinical decision support. Adoption of such standards by the private sector would be voluntary. Beginning five years after enactment, prohibits the Secretary from purchasing a health IT system that is not in compliance with the standards and requires recipients of federal health IT funds to purchase systems that are compliant with the standards. (3) Provides federal loan guarantees: (i) to enable networks of physicians, hospitals, and group health plans and other insurers to develop local health information infrastructures (LHII) for sharing data; and (ii) to enable health care providers that work with low-income and underserved populations to purchase health IT systems capable of linking to an LHII. Authorizes $50 million for each of FY2005-FY2010. No principal of a loan guarantee may exceed $5 million, and in any given 12-month period no amount disbursed to an eligible entity may exceed $5 million. (4) Authorizes grants: (i) to networks of physicians, hospitals, and group health plans and other insurers to develop LHIIs for sharing data; and (ii) to health care providers that work with low-income and underserved populations to purchase health IT systems capable of linking to a LHII. Requires grantees to provide matching funds to cover at least 20% of the costs of the IT project for which the grant was awarded. Authorizes $50 million for each of FY2005-FY2010. (5) Requires entities that receive a grant or loan guarantee to submit an annual report to the Director describing the financial costs and benefits of the project and its impact on health care quality and safety. Permits the Director to give preference in awarding grants and loan guarantees to entities that agree to submit reports electronically on a daily basis. (6) Requires the Secretaries of HHS, Defense, and VA, by January 1, 2009, to develop uniform health care quality measures for a total of 15 common health conditions and to establish requirements for federally supported health care delivery programs to report those quality measures. Requires the Secretaries to provide for the pooling, analysis, and dissemination of reported quality data. Requires the HHS Secretary to provide a progress report to Congress within two years. Following submission of the report to Congress, requires the Secretary within three years to publish final regulations on reporting uniform health care quality measures. (7) Requires the Secretary to ensure that demographic data collected under Medicare are accurate and available for inclusion in the National Health Disparities Report,[c] and to promote and enforce state demographic data collection and reporting requirements under Medicaid and SCHIP and ensure that those data are also available for inclusion in the National Health Disparities Report.[c]

NHII, standards, health IT grants and loan guarantees, quality measures	**S. 2907 (Dodd) Information Technology for Health Care Quality Act.** (1) Establishes within the Executive Office of the President an Office of Health Information Technology to: develop a national strategy for creating a NHII; advise the President on health IT; direct all health IT activity within the federal government; work with public and private health IT stakeholders to implement the national strategy; and ensure that health IT is utilized in health surveillance. Instructs the President to appoint a Director to head the Office. Requires federal agencies to seek Office approval in order to adopt significant new health IT policies. Directs the Office to encourage the development and adoption of health IT standards and work with the private sector to collect and disseminate best health IT practices. Directs the Office to coordinate with AHRQ and other federal agencies to evaluate the costs and benefits of health IT, including its impact on the quality and efficiency of patient care, and review federal reimbursement for health care providers that utilize health IT systems. Requires the Director within six months to make recommendations to the President and the Secretary on changes to federal reimbursement and payment structures to encourage the adoption of health IT. Requires the Secretary, within 90 days of receiving the recommendations, to provide Congress with an implementation plan. (2) Requires the Director, within two years and in collaboration with private sector stakeholders, to adopt national standards to enable health IT to be used in clinical settings, to promote the interoperability of clinical information across health care settings, and to facilitate the use of clinical decision support. Adoption of such standards by the private sector would be voluntary. Beginning one year after standards are adopted, prohibits the Secretary from purchasing a health IT system that is not in compliance with the standards and requires recipients of federal health IT funds to purchase systems that are compliant with the standards. (3) Provides federal loan guarantees: (i) to enable networks of physicians, hospitals, and group health plans and other insurers to develop local health information infrastructures (LHII) for sharing data; and (ii) to enable health care providers to purchase health IT systems capable of linking to a LHII. Instructs the Director to give special consideration to applicants serving low-income and underserved populations. Authorizes $250 million for each of FY2005-FY2010. No principal of a loan guarantee may exceed $5 million, and in any given 12-month period no amount disbursed to an eligible entity may exceed $5 million. (4) Authorizes grants: (i) to networks of physicians, hospitals, and group health plans and other insurers to develop LHIIs for sharing data; and (ii) to health care providers that work with low-income and underserved populations to purchase health IT systems capable of linking to a LHII. Requires grantees to provide matching funds to cover at least 20% of the costs of the IT project for which the grant was awarded. Authorizes $250 million for each of FY2005-FY2010. (5) Requires entities that receive a grant or loan guarantee to submit regular reports to the Director describing the financial costs and benefits of the project and its impact on health care quality and safety. (6) Within 18 months, requires the Secretaries of HHS, Defense, and the VA, in collaboration with other specified groups, to develop uniform health care quality measures for each of the IOM's 20 priority areas for improvement in health care quality,[b] and to establish requirements for federally supported health care delivery programs to report those quality measures. Mandates full implementation of all quality measures and reporting systems within one year of their development. Requires the Secretaries to provide for the pooling, analysis, and dissemination of reported quality data. Requires the HHS Secretary to evaluate the development and reporting of quality measures and report to Congress within one year. Following submission of the report to Congress, requires the Secretary within one year to publish final regulations on reporting uniform health care quality measures.

a. H.R. 663 was reported (as amended) by the Energy and Commerce Committee on Mar. 6, 2003. The Ways and Means Committee approved similar legislation (H.R. 877, H.Rept. 108-31) on Mar. 11, 2003. While the Ways and Means bill would amend the Medicare statute and apply only to hospitals and other health care facilities and their employees that provide health care services under Medicare Part A, the Energy and Commerce measure would amend the Public Health Service (PHS) Act and have broader coverage. H.R. 663 would apply to any individual or entity licensed to provide health care services. Following negotiations between members of both panels, it was agreed that the new law should be written into the PHS Act and that the Energy and Commerce bill (H.R. 633) would be brought to the floor for consideration by the full House.

b. Institute of Medicine, *Priority Areas for National Action: Transforming Health Care Quality* (Washington: National Academy Press, 2003).

c. P.L. 106-129, the Healthcare Research and Quality Act of 1999, directed AHRQ to submit to Congress annually a report on "disparities in health care delivery as it relates to racial factors and socioeconomic factors in priority populations," beginning in FY2003. The first National Report on Healthcare Disparities was released on Dec. 22. 2003, and is available online at [http://qualitytools.ahrq.gov/disparitiesReport/download_report.aspx].

Table 4. Summary of Health Information Technology (IT) Legislation Introduced in the 109th Congress

Bills approved by Committee	
Patient Safety: reporting medical errors	**S. 544 (Jeffords) Patient Safety and Quality Improvement Act.** On March 9, 2005, the Senate Health, Education, Labor, and Pensions (HELP) Committee approved S. 544, which is identical to last year's Senate-passed measure (S. 720). S. 544 is intended to encourage the reporting and analysis of information on medical errors by designating such information as confidential and protecting it from legal discovery and admission in civil, administrative, and criminal proceedings (unless a judge determined that the information contained evidence of a wanton and criminal act to directly harm the patient) and from Freedom of Information Act (FOIA) requests. Information on medical errors would be reported to Patient Safety Organizations (PSOs), which would analyze the information and develop and disseminate recommendations for systems-based solutions to improve patient safety and health care quality. S. 544 also would require the Agency for Healthcare Research and Quality (AHRQ) to adopt voluntary national interoperability standards. For more information, see CRS Report RL31983, *Health Care Quality: Improving Patient Safety by Promoting Medical Errors Reporting*.
Introduced bills (No legislative activity)	
NHII, standards, Medicare reimbursement, health IT grants and loans	**H.R. 747 (Gonzalez) National Health Information Incentive Act of 2005.** (1) Establishes within the Executive Office of the President an Office of the National Coordinator for Health Information Technology (ONCHIT), headed by a Director who responds directly to the President. (2) Within two years, requires the Secretary, through ONCHIT and in collaboration with the Commission on Systemic Interoperability, to adopt trial IT standards developed by accredited standard setting organizations to support the creation of an NHII. Requires the Secretary to consult with national organizations representing all the major stakeholders and rely on the recommendations of the National Committee on Vital and Health Statistics. Standards must be consistent with the HIPAA privacy and security rule and must not impose an undue administrative and financial burden on medical practice, particularly small physician and rural practices. Requires the Secretary to conduct a two-year pilot program at facilities throughout the country to test the effectiveness and impact of the trial standards. Within one year of completing the pilot program, requires the Secretary to assess the program and report to Congress. Authorizes the Secretary to modify the standards as appropriate. Requires individuals and entities that use EHRs and health IT to comply with the modified standards not later than two years after they are adopted. Small health plans and small providers of services (i.e., fewer than 25 full-time equivalent employees) have an additional year to comply. (3) Instructs the Secretary to provide Medicare payment incentives to help small providers acquire EHRs and other health IT, such as add-on payments for office visits supported by health IT, and payments for e-mail consultations. Exempts incentive payments from budget neutrality under the physician fee schedule. (4) Authorizes grants and revolving loans for small health care providers to acquire EHRs and other health IT. Authorizes such sums as may be necessary for such grants and loans. (5) Creates a tax credit for physicians who acquire EHRs and other health IT, equal to 10% of the amounts paid during the taxable year.

NHII, standards, health IT grants and loan guarantees, quality measures	**S. 16 (Kennedy) Affordable Health Care Act.** (1) Establishes within the Executive Office of the President an Office of Health Information Technology to: develop a national strategy for creating a NHII; advise the President on health IT; direct all health IT activity within the federal government; work with public and private health IT stakeholders to implement the national strategy; and ensure that health IT is utilized in health surveillance. Instructs the President to appoint a Director to head the Office. Requires federal agencies to seek Office approval in order to adopt significant new health IT policies. Directs the Office to encourage the development and adoption of health IT standards and work with the private sector to collect and disseminate best health IT practices. Directs the Office to coordinate with AHRQ and other federal agencies to evaluate the costs and benefits of health IT, including its impact on the quality and efficiency of patient care, and review federal reimbursement for health care providers that utilize health IT systems. Requires the Director within six months to make recommendations to the President and the Secretary on changes to federal reimbursement and payment structures to encourage the adoption of health IT. Requires the Secretary, within 90 days of receiving the recommendations, to provide Congress with an implementation plan. (2) Requires the Director, within two years and in collaboration with private sector stakeholders, to adopt national standards to enable health IT to be used in clinical settings, to promote the interoperability of clinical information across health care settings, and to facilitate the use of clinical decision support. Adoption of such standards by the private sector would be voluntary. Beginning one year after standards are adopted, prohibits the Secretary from purchasing a health IT system that is not in compliance with the standards and requires recipients of federal health IT funds to purchase systems that are compliant with the standards. (3) Provides federal loan guarantees: (i) to enable networks of physicians, hospitals, and group health plans and other insurers to develop local health information infrastructures (LHII) for sharing data; and (ii) to enable health care providers to purchase health IT systems capable of linking to a LHII. Instructs the Director to give special consideration to applicants serving low-income and underserved populations. Authorizes such sums as may be necessary for each of FY2006-FY2011. No principal of a loan guarantee may exceed $5 million, and in any given 12-month period no amount disbursed to an eligible entity may exceed $5 million. (4) Authorizes grants: (i) to networks of physicians, hospitals, and group health plans and other insurers to develop LHIIs for sharing data; and (ii) to health care providers that work with low-income and underserved populations to purchase health IT systems capable of linking to a LHII. Requires grantees to provide matching funds to cover at least 20% of the costs of the IT project for which the grant was awarded. Authorizes such sums as may be necessary for each of FY2006-FY2011. (5) Requires entities that receive a grant or loan guarantee to submit regular reports to the Director describing the financial costs and benefits of the project and its impact on health care quality and safety. (6) Within 18 months, requires the Secretaries of HHS, Defense, and the VA, in collaboration with other specified groups, to develop uniform health care quality measures for each of the IOM's 20 priority areas for improvement in health care quality,[a] and to establish requirements for federally supported health care delivery programs to report those quality measures. Mandates full implementation of all quality measures and reporting systems within one year of their development. Requires the Secretaries to provide for the pooling, analysis, and dissemination of reported quality data. Requires the HHS Secretary to evaluate the development and reporting of quality measures and report to Congress within one year. Following submission of the report to Congress, requires the Secretary within one year to publish final regulations on reporting uniform health care quality measures.

a. Institute of Medicine, *Priority Areas for National Action: Transforming Health Care Quality* (Washington: National Academy Press, 2003).

Appendix A

Congressional Hearings (2002–2005)

House Committee on Energy and Commerce

May 8, 2002	Reducing Medical Errors
July 22, 2004	Health Information Technology (Subcommittee on Health)

House Committee on Government Reform (Subcommittee on Technology)

July 14, 2004	Health Informatics, Public Health, and Emergency Response

House Committee on Veterans' Affairs (Subcommittee on Oversight)

May 19, 2004	VA's Role in Developing Electronic Medical Records

House Committee on Ways and Means (Subcommittee on Health)

March 7, 2002	Health Quality and Medical Errors
September 10, 2002	Legislation to Reduce Medical Errors
March 18, 2004	Health Care Quality
June 17, 2004	Health Information Technology
July 22, 2004	Electronic Prescribing
February 10, 2005	Medicare Payments to Physicians
March 15, 2005	Measuring Physician Quality and Efficiency

Senate Committee on Homeland Security and Governmental Affairs

June 11, 2003	Patient Safety: Instilling Hospitals with a Culture of Continuous Improvement

Senate Special Committee on Aging

September 23, 2003	HIPAA Medical Privacy and Transactions Rules: Overkill or Overdue?

GAO Reports and Testimony (2003–2005)

Information Technology: Benefits Realized for Selected Health Care Functions, GAO-04-224, October 31, 2003.

Computer-Based Patient Records: Improved Planning and Project Management are Critical to Achieving Two-Way VA-DOD Health Data Exchange, GAO-04-811T, May 19, 2004.

Health Care: National Strategy Needed to Accelerate the Implementation of Health Information Technology, GAO-04-947T, July 14, 2004.

HHS's Efforts to Promote Health Information Technology and Legal Barriers to its Adoption, GAO-04-991R, August 13. 2004.

HHS's Estimate of Health Care Cost Savings Resulting for the Use of Information Technology, GAO-05-309R, February 16, 2005.

Internet Resources

Federal Government

HHS — Nat. Coordinator for Health IT	[http://www.hhs.gov/healthit]
HHS — Nat. Committee on Vital and Health Statistics	[http://www.ncvhs.hhs.gov]
AHRQ — Healthcare Informatics	[http://www.ahrq.gov/data/infoix.htm]
CDC — Public Health Informatics	[http://www.cdc.gov/epo/dphsi/index.htm]

Professional Associations

American Academy of Family Physicians	[http://www.centerforhit.org]
American Health Information Management Association	[http://www.ahima.org]
American Medical Informatics Association	[http://www.amia.org]
Association of Medical Directors of Information Technology	[http://www.amdis.org]
Healthcare Information and Management Systems Society	[http://www.himss.org]

Public-Private Collaboratives/Research Groups/Stakeholders

eHealth Initiative	[http://www.ehealthinitiative.org]
Markle Foundation	[http://www.markle.org]
Connecting for Health	[http://www.connectingforhealth.org]

Center for Information Technology Leadership	[http://www.citl.org]
National Alliance for Health Information Technology	[http://www.nahit.org]
National Alliance for Primary Care Informatics	[http://www.napci.org]