A Call for Action

# Enabling Healthcare Reform Using Information Technology

Recommendations for the Obama Administration and 111th Congress

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# HiMSS®

Healthcare Information and Management Systems Society

# Enabling Healthcare Reform Using Information Technology

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*Please note that the recommendations included in the report have been updated from December 2008 to reflect newly enacted health IT provisions included in the American Recovery and Reinvestment Act of 2009 (ARRA)*

# Enabling Healthcare Reform
# Using Information Technology

## Recommendations for the Obama Administration and the 111th Congress*

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### Executive Summary

*Call to Action:* 2009 is the year for healthcare reform in the United States. HIMSS believes that that lives can be saved, outcomes of care improved, and costs reduced by transforming the healthcare system through the appropriate use of information technology (IT) and management systems.  It is essential that health IT be harnessed as a tool in transforming healthcare, improving quality by delivering information where and when it is most needed, reducing costs, empowering consumers in their healthcare decisions, and providing for the privacy and security of personal health information.

To ensure that health IT is appropriately addressed in anticipated healthcare reform policy in 2009, HIMSS developed unified recommendations for the new Congress and Administration concerning the role of health IT in healthcare reform. The recommendations represent necessary measures to develop and sustain a robust IT infrastructure for healthcare. Policymakers should consider the recommendations components of the necessary foundation to strengthen and sustain the success of their healthcare reform legislation, proposals, and regulation policies.

*Healthcare Reform and the Promise of Health IT:* With healthcare spending in the US totaling more than $2 trillion a year[i] and 45 million people in the US lacking health insurance,[ii] healthcare reform must be a top priority for the Obama Administration and the 111th Congress.[iii] As a proven tool for improving the efficiency and effectiveness of healthcare, health IT is essential to healthcare reform policy. In preparation for the 111th Congress, Members are already engaged in healthcare reform deliberations, through such initiatives as the formation of workgroups and the development of healthcare reform reports. As part of his healthcare platform during the presidential campaign, Senator Barack Obama called for a $10 billion-a-year investment over the next five years to foster the broad adoption of health IT.[iv] In addition, as President-elect, Barack Obama is now considering including health IT as part of an economic stimulus package to be introduced in early 2009.[v]

Health IT, such as electronic medical records (EMRs), electronic health records (EHRs), personal health records (PHRs), payor-based health records (PBHRs), and electronic prescribing (e-prescribing), shows promise for transforming the delivery and payment of healthcare in the US, and improving population health and the overall efficiency and effectiveness of healthcare. The

electronic exchange of health information made possible through health IT enables providers, payors, and consumers to effectively access health information, while reducing medical errors and eliminating unnecessary or duplicative healthcare services and costs. Recognizing the benefits of health IT, federal and state governments, in collaboration with the private sector, facilitate many initiatives to help foster the use of health IT.

Health IT holds great promise for healthcare throughout the US. The full benefits will be reaped when policymakers, including Members of Congress and the Administration, appropriately address the following issues:

- Leadership
- Interoperability
- Privacy and Security
- Electronic Payments
- Consumer Empowerment
- Funding

*Recommendations:* The recommendations concerning health IT's role in healthcare represent necessary measures to develop and sustain a robust IT infrastructure for healthcare. Policymakers should consider the recommendations components of the necessary foundation to strengthen and sustain the success of their healthcare reform legislation, proposals, and regulation policies. A full listing of HIMSS' recommendations concerning health IT's role in healthcare reform can be accessed at: www.himss.org/2009CalltoAction. A highlight of the recommendations is as follows:

- **Invest a minimum of $25 billion in health IT** to help non-governmental hospitals and physician practices adopt electronic medical records (EMRs). Additional funding should be allocated to cover EMR adoption by federal and state-owned healthcare providers, and establish health IT Action Zones. HIMSS also calls for the State Children's Health Insurance Program (SCHIP) to be expanded to make health IT available to Medicaid and SCHIP providers of healthcare to children.

  *Alignment with the ARRA:* The ARRA established $20.819 billion in incentives through the Medicare and Medicaid reimbursement systems to reward eligible providers for demonstrating a meaningful use of certified EHRs. In addition, the ARRA includes $2 billion for the ONC to administer in the form of grants to aid providers adopt and utilize health IT, entities to engage in HIE, and to aid in the training and education of a health IT workforce. While the ARRA makes great strides in establishing financial assistance for providers, there remains a need for all federal funding for health IT, either through HHS, the Department of Defense (DoD), and the Department of Veterans Affairs (VA) to be applied to health IT that incorporates HITSP interoperability specifications and are CCHIT certified.

- **Apply recognized standards and certified health IT products among all federally funded health programs** by requiring that federal funding to assist providers and payers within these programs adopt health IT only be used for the

purchase or upgrade of new health IT products that apply Healthcare Information Technology Standards Panel (HITSP) interoperability specifications and have Certification Commission for Health Information Technology (CCHIT) certification.

- **Expand Stark Exemptions and Anti-Kickback Safe Harbors for** EMRs to cover additional healthcare software and related devices that apply HITSP interoperability specifications, are CCHIT-certified, and allow for better coordination of care and information sharing among related providers and their patients. In carrying-out out this recommendation, the Secretary should implement necessary measures and requirements to protect against conflict of interest and improper relationships among providers.

- **Codify and authorize the following:**

  A. **Codify HITSP as the National Standards Harmonization Body** responsible for collaborating with the public and private sector to achieve a widely accepted and useful set of standards to enable the widespread interoperability among healthcare software applications. Adequate funding should be authorized and appropriated for HITSP from FY10 – FY14.

  B. **Codify a Senior Level Health IT Leader within the Administration** to oversee a national health IT strategy.

     *Alignment with the ARRA:* The ARRA established the Office of the National Coordinator for Health IT, to be appointed by the Secretary of HHS. The National Coordinator is responsible for such duties as endorsing standards and certification criteria, coordinating health IT policy and programs, serves as a leading member of the Health IT (HIT) Policy and HIT Standards Committees, and updating the Federal Health IT Strategic Plan. The legislation also authorized and appropriated $2 billion for the Office of the National Coordinator.

  C. **Authorize a Federal Advisory and Coordinating Body for Health IT.** Based on the experiences of the AHIC and its Successor organization, the US Congress should authorize a federal advisory committee – operating under the Federal Advisory Committee Act – responsible for advising the Administration on health IT initiatives throughout the US and coordinating standards harmonization through collaboration with HITSP and CCHIT.

     *Alignment with the ARRA:* To examine and advise the Secretary on health IT policy, the ARRA established two federal advisory committees, the HIT Policy Committee and the HIT Standards Committee. The HIT Policy Committee is responsible for making recommendations to the National

Coordinator relating to the implementation of a nationwide health IT infrastructure and the areas in which standards, implementation specifications, and certification criteria are needed for the electronic exchange and use of health information. The HIT Standards Committee is responsible for making recommendations to the National Coordinator on standards, implementation specifications, and certification criteria for the electronic exchange and use of health information.

- **Conduct a White House Summit on Healthcare Reform through Information Technology** to develop consensus and propose solutions to critical, national health IT issues within the context of the larger national healthcare reform effort.

*HIMSS' Comments:* HIMSS works tirelessly to advance the best use of information and management systems for the betterment of healthcare, and serves everyone with a stake in this effort. For additional information concerning this report or health IT policy, please contact K. Meredith Taylor, Director, HIMSS Congressional Affairs, at mtaylor@himss.org.

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[ii] Five Basic Facts on the Uninsured. Kaiser Commission on Medicaid and the Uninsured.
http://www.kff.org/uninsured/upload/7806.pdf.
[iii] States Moving Toward Comprehensive Health Care Reform. Kaiser Commission on Medicaid and the Uninsured.
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[iv] Healthcare Information Technology and Management Systems and the 2008 Democratic Platform. Healthcare Information and Management Systems Society.
http://www.himss.org/advocacy/d/HIMSS_HIT_Dem_Campaign_Platform.pdf.
[v] Obama Adds Health IT to Economic Stimulus Package. *Government Health IT*.
http://www.govhealthit.com/online/news/350702-1.html.

# Enabling Healthcare Reform
# Using Information Technology*

Recommendations for the Obama Administration and the 111th Congress

*Please note that the recommendations included in the report have been updated to reflect newly enacted health IT provisions included in the American Recovery and Reinvestment Act of 2009 (ARRA)*

## Call to Action

2009 is the year for healthcare reform in the United States. HIMSS believes that lives can be saved, outcomes of care improved, and costs reduced by transforming the healthcare system through the appropriate use of information technology (IT) and management systems.

Since 1961, HIMSS has been the healthcare industry's membership organization exclusively focused on providing global leadership for the optimal use of health IT and management systems for the betterment of healthcare. We work tirelessly to advance the best use of information and management systems for the betterment of healthcare and serve everyone with a stake in the outcome of that effort.  HIMSS represents more than 20,000 individual members – of which 73% work in a provider setting – and over 350 corporate members that collectively employ millions of people. Our role is to lead the profession, the industry and other key stakeholders in solving challenges and bringing about change when and where needed.

HIMSS believes it is essential to harness health IT as a tool in transforming healthcare, improving quality by delivering information where and when it is most needed, empowering consumers in their healthcare decisions, lowering costs, and providing for the privacy and security of personal health information.

## How We Arrived at Our Recommendations

To ensure that health IT is appropriately addressed in anticipated healthcare reform policy in 2009, more than 100 volunteers convened the HIMSS Healthcare Transformation through Health IT (HTHIT) Workgroup. Chaired by HIMSS members Maggie Lohnes, RN (Chair, HIMSS Advocacy & Public Policy Steering Committee) and Harry Greenspun, MD (Chair, HIMSS Government Relations Roundtable), the Workgroup consisted of physicians, nurses, pharmacists, hospital and clinical practice leaders, consumers, IT specialists, consultants, lawyers, payors,

vendors, and representatives from state-level health information exchange (HIE) organizations, and the federal government. The Workgroup deliberated from September – December 2008.

Health IT is not the sole solution for broad-scale healthcare reform.  Rather, health IT provides a mechanism to achieve the intent of healthcare reform: improving access to and the quality of healthcare, while lowering costs, empowering consumers in their healthcare decisions, and ensuring the privacy and security of personal health information. Five Sub-Groups, supporting the Workgroup, were charged with identifying health IT's role in each of these issues.

Two themes emerged as a need for healthcare reform policy to:
1.  Provide for a solid infrastructure for health IT that harnesses strong federal leadership and the standardized electronic exchange of health information; and
2.  Apply health IT as a means of increasing consumer and provider access to healthcare services and information, optimizing the efficiency of care payments, and protecting the privacy and security of health information.

The recommendations concerning health IT's role in healthcare represent necessary measures to develop and maintain a robust IT infrastructure for healthcare. Policymakers should consider the recommendations as components of the necessary foundation to strengthen and sustain the success of their healthcare reform legislation, proposals, and regulation policies.


# A Glimpse at the Healthcare Landscape

Unfortunately, "efficient" and "effective" are not common descriptors of healthcare in the US. The US spends more on healthcare[i] and sustains a higher infant mortality rate[ii] than any other industrialized country. Healthcare in the US is grossly inefficient, with higher healthcare spending not necessarily correlating with better outcomes and access to healthcare services.

In 2008, total healthcare spending in the US is expected to reach $2.4 trillion, 16.6% of the GDP,[iii] up from $2 trillion in 2005.[iv] By 2016, the Centers for Medicare and Medicaid Services (CMS) projects healthcare spending will be over $4.1 trillion, accounting for 19.6% of GDP.[v] The growing levels of healthcare spending correlate with the prevalence of chronic diseases, such as hypertension and diabetes, and treatment of the chronically ill. According to the Kaiser Family Foundation, about 45% of Americans suffer from one or more chronic diseases, accounting for 70% of deaths and about 75% of all healthcare spending.

As healthcare spending increases, so does the rate of uninsured Americans. Approximately 45 million Americans are uninsured,[vi] an increase of 1 million from 2000.[vii]  The rising rate of uninsured Americans is the result of high unemployment levels,[viii] the escalating cost of insurance premiums, lack of access to employer-sponsored healthcare coverage, and the inability to qualify for federal- and state-sponsored health coverage. Uninsured Americans are more likely to skip recommended medical tests and treatments, forgo preventative healthcare services, and delay needed treatments.[ix]

The aging baby-boomer population, combined with the increasing prevalence of Americans with disabilities and chronic diseases, place tremendous strains on publicly-funded healthcare programs, such as Medicare and Medicaid. Medicare, which provides healthcare coverage to 45 million Americans who are 65 or older, disabled, or have end-stage renal disease, accounts for 14% of federal spending.[x] From 2006 to 2012, net federal spending on Medicare is projected to

increase from $374 billion to $564 billion. The rising budget of the Medicare program is directly attributed to the composition of the program's beneficiaries and their rendered services:

- In 2005, 10% of beneficiaries accounted for more than two-thirds of total Medicare spending;[xi]
- About one-third of beneficiaries live with three or more chronic conditions;
- In-patient hospital stays make up the program's largest portion of expenses; and
- Approximately 2.2 million beneficiaries reside in long-term care settings.[xii]

Serving as the nation's largest health coverage program, Medicaid covers an estimated 49.1 million low-income Americans, including families, people with disabilities, and the elderly. In 2007, Medicaid served approximately one in five Americans. In 2008, Medicaid spending is expected to reach $339 billion, an increase of 7.3 percent over 2007. Over the next 10 years, CMS expects expenditures to increase at an annual average rate of 7.9 percent, reaching $673.7 billion by 2017.[xiii] Nearly three-quarters of Medicaid spending is attributed to one-quarter of the beneficiaries, primarily elderly and disabled individuals. The intense use of acute and long-term care services by these beneficiaries will continue to place an enormous strain on the program.[xiv, xv]

In the US, high levels of healthcare spending do not always correlate with high-quality care. According to the Central Intelligence Agency's (CIA) 2008 Fact Book, the US has the highest infant mortality rate (6.30) compared to other industrialized countries. Countries ranking higher than the US include Japan, United Kingdom, Hong Kong, Iceland, and France.[xvi] In addition, the US Department of Health and Human Services' (HHS) Agency for Healthcare Research and Quality (AHRQ) estimates that the number of deaths from medical errors ranges from 44,000 to 98,000 a year.[xvii]

# The Promise of Health IT

Health IT shows promise for transforming the delivery of healthcare in the US, improving population health and the overall efficiency and effectiveness of healthcare.  Health IT, also referred to as "HIT," can be defined as the use of computers and computer programs to store, protect, retrieve, and transfer clinical, administrative, and financial information electronically within and between healthcare stakeholders. Health IT is used in a variety of settings: in-patient (hospital, medical/surgical/ long-term care, etc.); out-patient (ambulatory and specialty); life sciences; payors; public health; and others. Examples of health IT include:

- Electronic Health Records (EHRs)
- Electronic Medical Records (EMRs)
- Personal Health Records (PHRs)
- Payor-based Health Records (PBHRs)
- Electronic Prescribing (e-Prescribing)
- Financial/Billing/Administrative Systems
- Computerized Practitioner Order Entry (CPOE) Systems

The potential benefits of health IT are enormous. Appropriately implemented and utilized, health IT can enable better access to healthcare services and information, resulting in improved healthcare outcomes and cost savings. Medical errors can be reduced and time constraints nearly eliminated when a caregiver uses health IT to review medical records or order healthcare services. Health IT also enables consumers to better communicate with their providers and manage their personal health, resulting in fewer office visits and better disease management.

Outside of a provider's office, health IT enables health information to be aggregated and applied to such activities as population health monitoring and disaster management, and optimizes payments for care.

The benefits of health IT can be broken down by two categories, "soft" return on investment (ROI) and "hard" ROI. Soft ROI addresses the benefits that are associated with patient safety, process improvement, and regulatory compliance. Hard ROI involves two measurements: quantifiable returns that can be demonstrated in financial terms and quality/process improvements that suggest cost savings that may fit an identifiable or measurable metric. Appendices 1 and 2 detail examples of ROI experienced among hospitals and ambulatory care providers. The providers that are included in the Appendices are recipients of the HIMSS Nicholas E. Davies Award of Excellence. Established in 1994, this program is a nationally-coveted award and peer-reviewed process founded upon the structure of the Malcolm Baldrige Award.  Awards are granted on demonstrated excellence in implementation, and proven derived ROI value from EHR/EMR systems, acting as model practices for others to emulate.

## Priority Issues for Health IT

While health IT holds great promise for healthcare throughout the US, the full benefits will not be reaped until policymakers, including Members of Congress and the Administration, appropriately address the following issues:
- Leadership
- Interoperability
- Privacy and Security
- Electronic Payments
- Consumer Empowerment
- Funding

### The Need for Strong Federal Leadership

Many initiatives were developed in 2004, through Executive Order 13335, to help pave the way for the development of a nationwide infrastructure for electronic HIE. The continued support by the federal government for these initiatives is essential to build on the accomplishments of the past four years and to continue these efforts in the utmost capacity.

Executive Order 13335 not only called for the widespread use of EHRs throughout the US by 2014, it also called for the creation of the Office of the National Coordinator for Health Information Technology (ONC) to coordinate health IT programs across the US. To date, the ONC has been instrumental in facilitating the American Health Information Community (AHIC) and a number of contracts concerning health IT. Examples of the ONC's contact activities include:
- Standards harmonization
- Certification of EHR products
- Advancement of a Nationwide Health Information Network (NHIN)
- Enhancement of the safety of health information
- Best-practices concerning state-level HIE activities

- Fostering the use of health IT in the Gulf Coast regions affected by hurricanes in 2005[xviii]

To date, the ONC has not been codified into law and does not have the adequate authority to coordinate health IT activities throughout all federal departments and the US. In the ever-changing healthcare, public health, and national security landscapes, *policymakers should codify a senior-level health IT position within the administration to oversee a national health IT strategy and carry-out necessary responsibilities*.

As the federal advisory committee, comprised of healthcare leaders from the public and private sectors, AHIC made great strides in developing recommendations to the Secretary of HHS concerning how to best accelerate the adoption of interoperable health IT. Recommendations included such areas as consumer empowerment, chronic care, EHRs, biosurveillance, and quality. Today, a public/private collaborative body, the "AHIC Successor" is developing to serve as a collaborative on health IT. *To ensure that public and private stakeholders continue to be actively engaged in the planning and development of health IT initiatives throughout the US, it is essential that a federal advisory committee on health IT, that is based on the experiences of the AHIC Successor organization, is developed to advise a senior level health IT leader within the administration.*

As healthcare reform is sure to be a top priority in 2009, it is essential that the Administration supports federal health IT initiatives, as well as heightens the awareness and understanding of the benefits that health IT holds for the entire healthcare community. The President is uniquely positioned to convene stakeholders throughout healthcare and collectively examine some of the leading challenges and issues facing health IT. *A national event that is sponsored by the President, which focuses on reforming healthcare using IT, would amplify the importance of health IT and propel a national dialogue on the matter.*

## Achieving Interoperability

Through support by the federal government, many initiatives in the private sector play an instrumental role in ensuring the secure and interoperable exchange of health information. It is essential that the federal government continue to support existing initiatives to harmonize standards and certify health IT products.

Since its inception in 2005, the Healthcare Information Technology Standards Panel (HITSP) has been leading the national effort to harmonize interoperability standards to facilitate the exchange of patient data. The mission of HITSP is to serve as a cooperative partnership between the public and private sectors to achieve a widely accepted and useful set of standards to enable the widespread interoperability among healthcare software applications, as they will interact in a local, regional and nationwide HIE.

HITSP is comprised of 558 member organizations, including standards development organizations (SDOs), non-SDOs, government bodies, and consumer groups, and is administered by a board of directors. HITSP's harmonization work has addressed such areas as EHRs, biosurveillance, consumer empowerment, medication management, quality and population health.[xix] *It is essential that the federal government support HITSP to advance the standards harmonization effort to achieve interoperability of electronic health record systems.*

Building on standards harmonization that is made possible through HITSP, the Certification Commission for Healthcare Information Technology (CCHIT) is an independent, non-profit organization that functions as a recognized certification body (RCB) for EHRs and their networks. The mission of CCHIT is to accelerate the adoption of health IT by creating an efficient, credible and sustainable certification program. CCHIT is governed by commissioners who represent a wide array of stakeholders throughout the healthcare community.

To date, CCHIT has certified more than 150 EHR products, representing 50% of all vendors in the market and 75% of the overall EHR market to date.[xx] CCHIT has helped streamline the EHR market by serving as a trusted source to guide providers when adopting health IT products. CCHIT has also aided in fostering interoperability among products through implementation of its standards-based criteria. As stakeholders throughout the US continue to work to achieve the nationwide electronic exchange of health information, ***it is essential that the federal government leverage its role as the largest payor of healthcare and work to foster the use of CCHIT-certified health IT products that enable the large-scale secure and interoperable exchange of health information.***

Another challenge to interoperability within healthcare is the lack of an identity solution to effectively link a patient's medical history across multiple settings and providers. Currently, statistical matching techniques are used to link a patient with his or her medical records through common identifiers such as last name, first name, date of birth, and part of a Social Security Number. Unfortunately, many of these identifiers can change over time and providers/payors do not always use the same set of identifiers for each patient. As a result, medical records are often incomplete and cannot be easily located and accessible among providers, and costs are increased due to confusing claims submissions. Without a common patient identity solution, patients are at risk for medical errors.[xxi] ***It is essential that the Secretary of HHS, under direction from the US Congress, establish a patient identity solution.***

Codes are another essential component to accurately exchanging health information among providers. Codes are applied by providers to identify services and diseases to reimburse providers for healthcare services. Codes pertain to Current Procedural Terminology (CPT), products, supplies, and the classification of diseases. As national and international standards setting organizations develop new codes and coding systems, it is important that healthcare adopts and implements the codes on a timely basis. For electronic HIE to be effective in improving the delivery of healthcare, and to optimize the payment of care, the global use of the most widely-accepted codes is essential to accurately exchange health information. ***Policymakers should continue to support the routine updating of codes and coding systems for effective healthcare delivery and payment.***

## Providing for the Privacy and Security of Personal Health Information

In addition to the need for policymakers to support numerous activities concerning the federal leadership for health IT and the interoperability across healthcare products, policymakers should address how to best ensure the privacy and security of protected health information (PHI) in an increasingly complex healthcare environment. Today, the legal and regulatory landscape surrounding the use and disclosure of PHI poses many challenges to achieving the nationwide exchange of health information. For example, while the Health Insurance Portability and Accountability Act (HIPAA) addresses security and privacy regulations pertaining to the use of health data among Covered Entities (CEs) (healthcare providers, health plans, or healthcare

clearing houses), state privacy laws and regulations often impose stricter regulations. Also, HIEs as entities are not covered by HIPAA. These may be among the reasons that the possibility of electronic HIE thus far has been difficult to achieve. In addition, providers' lack of knowledge and awareness concerning the appropriate use and disclosure of PHI could result in a reluctance to use health IT that would result in the overall improved efficiency of healthcare.

Additional challenges concerning the privacy and security of PHI arise as new entities that are not considered CEs under HIPAA develop to facilitate electronic HIE. For example, new entities engaged in HIE and the storage and access of PHI that do not have contractual relationships with CEs, but offer a health IT solution to consumers, such as PHRs, are not subject to the HIPAA privacy and security regulations. Such offerings facilitate a migration of PHI outside of the traditional healthcare system and such a scenario is considered by some to pose great risk to consumers in ensuring the privacy and security of their health information. Yet a solution on how to govern such entities has not been established by the federal government.

In an effort to address many of the challenges pertaining to the privacy and security of PHI, the federal government has supported initiatives to examine state and federal laws and regulations that pertain to the privacy and security of personal health information. Examples of these initiatives include the Health Information Security and Privacy Collaboration (HISPC), the State Alliance for e-Health, and the state-level HIE Consensus Project. To fully achieve the widespread exchange of health information throughout the US that provides for the utmost privacy and security of PHI*, it is essential that the federal government not only continue to support these initiatives, but also ensure that legislative, regulatory, and industry best practice solutions are all leveraged in the most effective way possible to address some the most complex challenges concerning the privacy and security of PHI.*

## Fostering Smart Business Practices in Healthcare

As policymakers strive to automate healthcare through such health information systems as EHRs, it is important that health information management systems are equally applied in healthcare to improve the performance of everyday administrative functions among payors and providers, such as processing claims and bills. According to the McKinsey & Company, the US healthcare system consumes more than 15% of total expenditures on processing payments. In addition, it is estimated that providers spend $100 billion or more a year in managing claims and $150 billion is spent among public and private payors.

While much of the high costs is associated with activities such as contract management and revenue cycle processes, one of the most important factors is the high cost of transmitting paper-based claims and payment of claims among payors and providers. McKinsey & Company finds that approximately 60% of all claims payments are paper-based, involving paper claims that are sent between payors and providers manually submitting and reconciling claims and depositing checks. Paper-based claims cost approximately $8 per item.

Each year in the US, the volume of claim payments is 2.5 million. As the majority of reimbursements are based on paper checks, this costs healthcare $15 - $20 billion a year in postage, processing, and accounting. It is estimated that increasing the rate of electronic payment of claims to 90% from the current 40% could save $6 billion or more across the country.[xxii] Healthcare and the US economy can no longer afford to wait to bring their business practices into

| Stage | Cumulative Capabilities | % of US Hospitals 2008 Q2 | % of US Hospitals 2008 Q3 |
|---|---|---|---|
| Stage 7 | Medical record fully electronic; HCO able to contribute CCD as byproduct of EMR; Data warehousing in use | 0.0% | 0.1% |
| Stage 6 | Physician documentation (structured templates), full CDSS (variance & compliance), full R-PACS | 0.9% | 1.0% |
| Stage 5 | Closed loop medication administration | 1.0% | 1.3% |
| Stage 4 | CPOE, CDSS (clinical protocols) | 1.8% | 1.9% |
| Stage 3 | Clinical documentation (flow sheets), CDSS (error checking), PACS available outside Radiology | 32.0% | 32.9% |
| Stage 2 | Clinical Data Repository, Controlled Medical Vocabulary, Clinical Decision Support System, may have Document Imaging | 33.9% | 33.2% |
| Stage 1 | Ancillaries – Lab, Rad, Pharmacy - All Installed | 12.6% | 12.5% |
| Stage 0 | All Three Ancillaries Not Installed | 17.7% | 17.1% |

EMR Adoption Model[SM]

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the 21st century. ***Congress should mandate an end to the use of paper checks for reimbursement among payors and providers of federally-funded healthcare programs.***

Figure A. EMR Adoption Model (EMRAM).

## Assisting Providers in the Adoption and Use of Health IT

While health IT holds great promise for healthcare in the US, not all providers have the financial means to adopt and use health IT products. Unless the federal government proactively assists providers with the financial incentives to adopt and use health IT, healthcare is decades away from reaping the benefits of the widespread exchange of health information. In a recent survey conducted by HIMSS and HIMSS Analytics, about 30% of the 500 surveyed ambulatory care providers use some component of an EMR in their organization.[xxiii] In addition, HIMSS Analytics' EMR Adoption Model (EMRAM), based upon a census survey of 100% of medical/surgical non-federal hospitals in the US, indicates that over 80% of hospitals in the US use some level of an EMR (Figure A).

The EMRAM identifies the levels of EMR capabilities ranging from the initial clinical data repository (CDR) environment through a paperless EMR environment. HIMSS Analytics can determine the level of EMR capabilities through a methodology and algorithms to score the 5,071 hospitals in its database relative to their progress in implementing the components of an EMR and to provide peer comparisons for care delivery organizations.

According to some organizations, the potential savings from the widespread use of health IT could reach over $75 billion each year. For example, the RAND Corporation estimated that, if the healthcare system of the US implemented the use of computerized medical records, the system

could save the US more than $81 billion each year.[xxiv] In addition, the Center for Information Technology Leadership (CITL) estimated that the implementation of national standards for interoperability and the exchange of health information would save the US approximately $77 billion in expenses relating to healthcare each year.[xxv]

Unfortunately, financial constraints inhibit many ambulatory and acute care providers (i.e., hospitals) from adopting health IT. According to some studies, initial costs that are associated with adopting health IT are approximately $33,000[xxvi] or $10,000 over a three-year period.[xxvii] In addition, HIMSS Analytics estimates that the average cost for civilian US hospitals is approximately $13,529,000 - $19,585,000 billion to achieve an EMRAM Stage 4.

To date, many federal programs, facilitated through such agencies as the Health Resources Services Administration (HRSA), CMS, and AHRQ, are working to foster the use of health IT among providers through the use of financial incentives, such as grants, loans, and increased reimbursement. Many of these programs are focused on those providers that serve the lowest-income Americans. *To ensure that federal funds are used to their fullest extent, the federal government must authorize and appropriate funding for health IT in a strategic manner that will foster the wide-scale use of interoperable health IT and support the needs of underserved patient populations.*

Another challenge among providers in effectively utilizing health IT relates to the financial aspects of supporting telehealth services. While telehealth should not be interpreted as a form of health IT, health IT is an enabling component of telehealth services. According to the American Telemedicine Association (ATA), telehealth refers to a method of delivery care and healthcare services over distances.[xxviii]

Financial challenges surrounding telehealth services relate to infrastructure and reimbursement. Today, lack of funding inhibits many communities from having the proper telecommunications infrastructure, primarily access to broadband, to provide telehealth services that rely on tools such as EMRs, medical imaging, and video conferencing. In 2007, to aid public and non-profit healthcare providers in building state and regional broadband networks for telehealth, the Federal Communications Commission's (FCC) Rural Health Care Pilot Program (RHCPP) dedicated over $417 million to healthcare entities in 42 states and three US territories.[xxix] *Continued support and expansion of this program is essential for the long-term sustainability and growth of telehealth in the US.*

In addition to infrastructure, reimbursement for telehealth services is inadequate, inhibiting many providers from engaging in telehealth programs. Medicare is the key program providing reimbursement for telehealth services. Reimbursement for select telehealth services is also available among certain private health plans and some state Medicaid programs.[xxx] Unless a state mandates for a telehealth services to be covered by private health plans, reimbursement for telehealth services is available only through select Medicaid programs. Under Medicare, reimbursement for telehealth services is inconsistent among providers, services, and geographic regions. For example, even though telehealth can benefit any underserved community that lacks access to a specialized healthcare service, a foundational requirement for telehealth services under Medicare is that the service must be provided for outside of a metropolitan area. In addition, while telehealth holds great promise for home healthcare, Medicare does not reimburse for telehealth services delivered by home health agencies. *It is essential that providers are recognized appropriately for their services that are delivered through telehealth.*

## Empowering Consumers through Health IT

While there are many programs underway among federally-funded health programs that make health IT, such as PHRs and PBHRs, available to beneficiaries, there are no plans to ensure that all beneficiaries have access to such tools to better manage their health. Wide-spread use of health IT among beneficiaries would enable both the private and public sectors to empower consumers with health information through IT. Examples of such programs that are currently underway are through the Veteran's Health Administration (VHA) and CMS.

Through the VHA, veterans can access their PHR, "My HealtheVet," to enter information about their medical and personal histories, as well as keep personal logs concerning their cholesterol and blood sugar levels. Through these features, clinicians are able to maintain a more comprehensive health record on a patient. My HealtheVet also provides patients access to literature and other clinical information. In addition, the patients can request prescription refills and even control who can see their information on the PHR.[xxxi]

CMS is exploring the benefits of consumer-centric health IT. Through multiple pilot projects within Medicare, CMS is assessing the use of PHRs by identifying features that beneficiaries prefer and how a PHR can incorporate claims information from services outside of the program.[xxxii, xxxiii] Also through CMS, many state Medicaid programs are using health IT to foster consumer engagement with their healthcare. For example, through a Medicaid Transformation Grant, Oregon Medicaid is working to improve the efficiency in healthcare delivery by providing beneficiaries with their own PHR that is facilitated through the Health Record Bank of Oregon (HRBO).[xxxiv] *As Medicare and Medicaid continue to serve some of the most chronically ill patient populations, it is essential that the programs strategically empower the beneficiaries with health IT.*

## The Climate for Healthcare Reform

As depicted above, healthcare in the US will continue to operate at inefficient and unsustainable levels unless real reforms are implemented to transform the delivery of care. In 2009, policymakers are determined to enact transformative healthcare policy to address escalating healthcare costs and disparities in access to healthcare services.

As part of his campaign, President-Elect Barack Obama's healthcare proposal included many measures aimed to improve the overall quality, efficiency, and access to healthcare. Aspects of then-candidate Obama's campaign proposal included:

- Provide for affordable and high quality universal coverage through a mix of private and expanded public insurance.
- Require that all children have health insurance.
- Require insurance companies to cover pre-existing conditions.
- Create tax-credits to help small businesses provide affordable health insurance to their employees.

- Establish a National Health Insurance Exchange to help individuals and small businesses buy affordable health coverage.
- Invest $50 billion toward the adoption of EMRs and other health IT.
- Improve the prevention and management of chronic conditions.
- Reform medical malpractice.
- Expand the primary care provider and public health practitioner workforce.
- Reduce healthcare costs by allowing the importation of safe medicine.[xxxv]
- Expand funding to ensure a strong workforce that will champion prevention and public health activities.[xxxvi]

As President-elect, Barack Obama is now considering including health IT as part of an economic stimulus package to be introduced in early 2009.[xxxvii]

Healthcare reform has been a long-term priority for many Members of Congress. During the 110th Congress, healthcare reform legislation was introduced in the US House of Representatives and US Senate. Common themes included in legislation pertained to the expansion of federal health insurance, coverage requirements for health plans, application of health IT, and tax credits to assist individuals in purchasing health insurance (Appendix 3).

In preparation for the 111th Congress, Members of Congress are already engaged in healthcare reform deliberations. For example, in November, 2008, Senator Max Baucus (D-MT) released a report entitled "Call to Action," which detailed priorities and next steps for healthcare reform. Also in November, Senator Edward Kennedy (D-MA) announced the formation of three Work Groups within the US Senate Health, Education, Labor, and Pensions Committee to deal with critical issues of healthcare reform, such as prevention and public health, quality, and insurance coverage.

No matter what form it takes, healthcare reform is sure to be a priority in 2009 and beyond. Healthcare reform is viewed as an even greater priority by policymakers given the current economic climate. In turn, there is no telling if healthcare reform will be considered through one piece of legislation, or numerous legislative vehicles.

# Conclusion

As policymakers engage in deliberations concerning healthcare reform with the goal of re-creating a functional US healthcare system, ***it is essential that health IT is integrated into any healthcare reform proposal.*** Health IT is a pivotal tool in transforming the delivery and payment of healthcare, holding opportunities to improve the access and quality of healthcare, while decreasing the costs, empowering consumers in their healthcare decisions, and enhancing the privacy and security of personal health information.

When incorporating health IT in healthcare reform policy, it is important that policymakers address some of the most priority issues facing the widespread integration of health IT in healthcare, such as leadership, interoperability, privacy and security, and funding. Policymakers should consider HIMSS' recommendations concerning each of these priority issues to strengthen and sustain the success of their healthcare reform legislation, proposals, and regulation policies.

# Recommendations

The recommendations included in the report have been updated to reflect newly enacted health IT provisions included in the ARRA. Where a recommendation or parts of a recommendation align with the ARRA, the recommendation is noted through the text: ***"Alignment with the ARRA".*** While the ARRA made great strides in providing financial assistance to providers for the adoption and utilization of health IT and the establishment of federal leadership for national health IT initiatives, much opportunity still remains to develop and maintain a robust IT infrastructure for healthcare. For additional information on the health IT provisions included in the ARRA and information on what the legislation means for the health IT industry, please visit HIMSS' economic stimulus resources at: www.himss.org/economicstimulus.

1. **Invest a Minimum of $25 Billion on Health IT:** The US Congress should authorize and appropriate a minimum of $5 billion per year, from FY10-FY14, on health IT in non-governmental hospitals and physician practices[xxxviii] that contract with or receive funding from federal sources. Additional funding should be made available to provide comparable health IT adoption in federal and state-owned hospitals, public health departments, and physician practices.

   *Alignment with the ARRA:* The ARRA established $20.819 billion in incentives through the Medicare and Medicaid reimbursement systems to reward eligible providers for demonstrating a meaningful use of certified EHRs. In addition, the ARRA includes $2 billion for the ONC to administer in the form of grants to aid providers adopt and utilize health IT, entities to engage in HIE, and to aid in the training and education of a health IT workforce. While the ARRA makes great strides in establishing financial assistance for providers, there remains a need for all federal funding for health IT, either through HHS, the Department of Defense (DoD), and the Department of Veterans Affairs (VA) to be applied to health IT that incorporates HITSP interoperability specifications and are CCHIT certified.

   The following specific recommendations for increased federal funding aim to foster wide-scale use of interoperable health IT and support the needs of underserved patient populations:

   A. **Incentivize EMR Adoption**: The US Congress should authorize and appropriate funding for the Secretaries of HHS, the DoD, and the VA to incentivize acute and ambulatory care providers, which contract with Medicare and Medicaid or receive federal funding, to adopt EMRs that apply HITSP interoperability specifications and are CCHIT-certified. The Secretary of HHS should provide adequate incentives, such as grants, loans, and tax benefits, to assist providers in adopting EMRs and improve the delivery of healthcare.

i. The US Congress should direct the Secretary of HHS to incentivize all acute care providers that contract with Medicare and Medicaid or receive federal funding to achieve EMRAM[xxxix] Stage 4 implementation no later than December 31, 2014. To carry-out this requirement, the Secretary should provide adequate incentives, such as grants, loans, and tax benefits to providers for the purchase, implementation, change management, and training of EMR products that apply HITSP specifications and are CCHIT-certified.

ii. The US Congress should direct the Secretary of HHS to incentivize all ambulatory care providers that contract with Medicare and Medicaid or receive federal funding to achieve EMR adoption to accomplish results such as, but not limited to, data repositories, basic medication management, ePrescribing, and clinical decision support no later than December 31, 2014. To carry-out this requirement, the Secretary should provide adequate incentives, such as grants, loans, and tax benefits to providers for the purchase, implementation, change management, and training of EMR products that apply HITSP specifications, are CCHIT-certified, and are integrated with practice payment systems.

iii. The US Congress should direct the Secretary of Defense and Secretary of Veterans Affairs to review their health IT programs and institute necessary requirements to advance EMR adoption by civilian entities that provide care to beneficiaries and their families.

B. **Provide Health IT for Children:**  The US Congress should expand the State Children's Health Insurance Program (SCHIP) Federal Medical Assistance Percentages (FMAP) by providing funding to support the adoption of EMRs, PHRs, and PBHRs for Medicaid and SCHIP providers who deliver healthcare to children, with the goal of expanding the widespread use of payor data and EMRs among providers to achieve EMRAM Stage 4 no later than December 31, 2014. CMS should be empowered to coordinate activities with other agencies to ensure Federally Qualified Health Centers (FQHCs) and Community Health Centers are engaged in the activity. State Medicaid and SCHIP programs would have the authority to determine how to best allocate the funds among providers and payors, requiring that funds be used for the application of HITSP interoperability specifications and CCHIT-certified health IT products to improve the delivery of healthcare.

C. **Establish Health IT Action Zones:**  The US Congress should authorize and appropriate funding for grants and other incentives to establish Health IT Action Zones that demonstrate effective practices for promoting the adoption of health IT by clinicians who provide care to individuals in vulnerable populations, as well as by providers that care for patients who are medically underserved and are impacted by health and/or digital disparities. Health IT Action Zones should also apply health IT to foster model clinical practices in

disease management, address primary prevention and co-occurring chronic conditions,  and target patients with low health literacy. Grants and other incentives should require the application of HITSP interoperability specifications and CCHIT-certified health IT products. In addition, the US Congress should require the Secretary, in collaboration with a senior level federal administrator for health IT, to carry-out a study evaluating the impact of Health IT Action Zones and make recommendations regarding the use of health IT to improve the health and healthcare of racial and ethnic minority groups.

2. **Apply HITSP and CCHIT among all Federally Funded Health Programs:**  The US Congress should mandate that any funding appropriated for the purchase or upgrade of new health IT products among providers and payors of federally funded health programs only be allocated only for the use of health IT products that apply HITSP interoperability specifications and are CCHIT-certified. This requirement should be enforced only when appropriate standards and certified products are available on the market. In addition, not later than December 31, 2014, all federally-funded health programs and all organizations that directly conduct business with federally-funded health programs must adhere to these same requirements.

3. **Expand Stark Exemptions and Anti-kickback Safe Harbors:** The Secretary of HHS should expand and make permanent the current Stark exemptions and Anti-kickback safe harbors for EMRs to cover additional healthcare software and related devices that apply HITSP interoperability specifications, are CCHIT-certified, and allow for better coordination of care and information sharing among related providers and their patients. In carrying-out out this recommendation, the Secretary should implement necessary measures and requirements to protect against conflict of interest and improper relationships among providers.

4. **Codify and Authorize the following:**

   A. **Codify HITSP as the National Standards Harmonization Body:** The US Congress should codify HITSP as the national harmonization body responsible for collaborating with the public and private sector to achieve a widely accepted and useful set of standards to enable the widespread interoperability among healthcare software applications. Adequate funding should be authorized and appropriated for HITSP from FY10 – FY14.

   B. **Codify a Senior Level Health IT Leader within the Administration**: The US Congress should codify a senior-level position within the Administration for a set time period to specifically oversee a national health IT strategy and carry out the following responsibilities:

      i. Coordinate, mandate, and oversee the implementation of a national strategic plan on health IT. The strategic plan should include timelines, milestones, and goals for transforming healthcare using IT for all clinicians, payors, and consumers throughout the US.

ii.    Coordinate and oversee implementation of health IT initiatives across all agencies and departments of the federal government in coordination with similar efforts in the private sector.

iii.   Review federal health IT investments to ensure that federal health IT programs meet the objectives of the strategic plan to aid in the establishment of a nationwide interoperable infrastructure for health IT.

iv.    Facilitate a new initiative by the federal Chief Information Officer (CIO) Council that is focused on health IT.

*Alignment with the ARRA:* The ARRA established the Office of the National Coordinator for Health IT, to be appointed by the Secretary of HHS. The National Coordinator is responsible for such duties as endorsing standards and certification criteria, coordinating health IT policy and programs, serves as a leading member of the Health IT (HIT) Policy and HIT Standards Committees, and updating the Federal Health IT Strategic Plan. The legislation also authorized and appropriated $2 billion for the Office of the National Coordinator.

C.  **Authorize a Federal Advisory and Coordinating Body for Health IT:**
Based on the experiences of the AHIC and its Successor organization, the US Congress should authorize a federal advisory committee – operating under the Federal Advisory Committee Act – responsible for advising the Administration on health IT initiatives throughout the US and coordinating standards harmonization through collaboration with HITSP and CCHIT. The Committee should report to a senior-level health IT position within the Administration and include membership from the public and private sectors. In addition, the Committee should lead the development of federally-endorsed business cases for health information exchange on the local, state, and federal levels. The US Congress should authorize and appropriate adequate funding to support the functions of the Committee from FY10 – FY14.

*Alignment with the ARRA:* To examine and advise the Secretary on health IT policy, the ARRA established two federal advisory committees, the HIT Policy Committee and the HIT Standards Committee. The HIT Policy Committee is responsible for making recommendations to the National Coordinator relating to the implementation of a nationwide health IT infrastructure and the areas in which standards, implementation specifications, and certification criteria are needed for the electronic exchange and use of health information. The HIT Standards Committee is responsible for making recommendations to the National Coordinator on standards, implementation specifications, and certification criteria for the electronic exchange and use of health information.

5. <u>**Conduct a White House Summit on Healthcare Reform through Information Technology:**</u> Within 90 days of assuming office, the President should host a White House Summit specifically focused on reforming healthcare using information technology. The Summit will provide an opportunity for leading health IT stakeholders to develop consensus and propose solutions to critical, national health IT issues within the context of the larger national healthcare reform debate. The bipartisan summit should include representatives from all stakeholder groups, including clinicians and consumers, with a goal to propose and support immediate legislative and regulatory changes that can transform our nation's healthcare system.

6. <u>**Expand the FCC's RHCPP:**</u> The proper information infrastructure must be in place to support access to healthcare in underserved communities. The US Congress should expand the FCC's RHCPP to incorporate not only rural healthcare providers, but all providers in underserved communities that require access to telehealth networks. In addition, the US Congress should require a study and report within one year after expansion of the RHCPP, to evaluate strengths and weaknesses within the program.

7. <u>**Reimburse for Remote Telehealth Visits:**</u> HIMSS supports the American Telemedicine Association's (ATA) recommendation that remote telehealth visits provided by homecare agencies or related organizations should be appropriately recognized for the purposes eligibility and payment by Medicare, similarly to in-home, face-to-face visits. In addition, HIMSS recommends that the US Congress act upon such a recommendation within one year.[xl]

8. <u>**Broaden Medicare Reimbursement of Telehealth Services:**</u> The Secretary of HHS should evaluate and make recommendations to the US Congress within 90 days to broaden Medicare reimbursement of telehealth services.

9. <u>**Establish a Patient Identity Solution:**</u> The US Congress should direct the Secretary of HHS to establish a patient identity solution within one year that will enable the ability to uniquely and uniformly identify a patient and his/her medical history, while protecting the patient's privacy, with respect to the various databases for completeness, accuracy, and the ability to provide for quality improvement research and analysis. The patient identity solution should be implemented by all clinicians who provide care to federal beneficiaries within two years after adoption.

10. <u>**Support Modern Coding Upgrades**</u>: The US Congress should direct the Secretary of HHS to support upgrades to modern coding systems, as defined by HITSP, on a timely and regular basis and streamline the healthcare standards' implementation process by working with the industry in its rule-making process to determine how best to afford flexibility in keeping standards in pace with the industry through a timely and predicable process.

11. <u>**Enable HIE:**</u> The US Congress should direct the Secretaries of HHS, DoD, and VA to incorporate incentives for provider and payor participation in HIE efforts and a

Nationwide Health Information Network into other funding initiatives for health IT and healthcare transformation.

*Alignment with the ARRA:* In addition to the incentive programs through Medicare and Medicaid, the ARRA established two grant programs to assist providers in the adoption and utilization of EHRs. Specifically, the ARRA established a grant program, administered through the National Coordinator, to help facilitate and expand electronic movement and use of health information among organizations. Grants are to be awarded through the program to a State or qualified State-designated entity. The grants will begin in fiscal year 2011. In addition, the ARRA established a competitive grants program for eligible entities (State or Indian Tribe) for the establishment of programs for loans to healthcare providers. Through the grant, an eligible entity is required to establish a certified EHR technology loan fund.

12. **Conduct a Study and Develop a Roadmap for the Appropriate Uses and Disclosures of Personal Health Information:** The US Congress should direct the Secretary of HHS to complete a study within one year on the current legal and regulatory environment affecting the uses and disclosures of electronic personal health information.  This study should include HIPAA, state privacy laws, and other applicable federal and state laws and regulations (e.g., financial, fair information practices, consumer protection, etc.).  The study should review the work of the ONC, HISPC, HITSP, and relevant work from other organizations. The study should result in the timely development of a pragmatic roadmap or framework concerning the appropriate uses and disclosures of personal health information and any policy recommendations necessary to support the exchange of health information between public and private sectors. The study should be facilitated by the senior health IT leader within the Administration and carried out by a balanced representation of healthcare, patient and information technology stakeholders.

13. **Mandate Direct Deposits by 2010:**  The US Congress should mandate an end to the use of paper checks for reimbursement among the payors and providers of federally funded health programs by December 31, 2010. This action could serve as a tipping point for all payors and providers throughout the US to use electronic direct deposits, a measure which could save $6 billion or more a year in healthcare expenditures**.**[xli]

14. **Incentivize PHR and PBHR Adoption:** The US Congress should direct the Secretary of HHS to require all Medicare and Medicaid contractors or fee-for-service programs to create and make available PHRs and PBHRs for the beneficiaries of such programs. In addition, Medicare and Medicaid contractors or fee-for-service programs should provide incentives to beneficiaries to aid in adoption and utilization of PHRs and PBHRs.

Recommendations for the Obama Administration and the 111<sup>th</sup> Congress

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http://www.govhealthit.com/online/news/350702-1.html.
[xxxviii] The figure is developed from estimates of the current cost of all ambulatory and acute care providers
adopting EMRs. The cost estimates for ambulatory care providers are as follows: Using data from the US
Department of Labor's Bureau of Labor Statistics' "Occupational Outlook Handbook, 2008-2009", we can
determine that there are approximately 411,450 physicians who are either solo practitioners, partners in, or
employed by, physician practices.  According to "Evidence on the Costs and Benefits of Health
Information Technology", by the Congressional Budget Office (CBO), 12% physicians in ambulatory
practice have an EMR in their practice.  Between these two data points, we can postulate that the 88% of
physicians in private practices without EMRs equates to a number of 362,076.  In addition, in reports by the
American Academy of Family Physicians Center for Health Information Technology entitled "Partners for
Patients Electronic Health Record Market Survey" and  "Medical Groups' Adoption of Electronic Health
Records and Information Systems", by Gans et al, we are able to derive a cost estimate between $30,000
and $33,000 per physician for a practice to adopt an EMR system. From the estimations of physicians in
physician practices in the US, and the average cost of an EMR per physician, we can estimate that the
initial cost of for these 362,076 physicians to adopt an EMR is $11.94 billion. In addition, according to
"Can Electronic Medical Record Systems Transform Health Care: Potential Health Benefits, Savings, and
Cost", by Hillestad et al., published in the September/October 2005 edition of Health Affairs, the authors
estimate that to achieve a 90% adoption of EMRs among physician practices would cost $17.2 billion over
15 years. Given the successes in EMR adoption to date, this number can be assumed to have lessened over
the past three years. Using these data sources, we can determine that the cost estimate for all physicians
working in physician practices to adopt an EMR is between $11-15 billion. The cost estimates for acute
care providers are as follows: HIMSS Analytics estimates that the low-end estimate for all civilian US
hospitals to achieve a "Stage 4" functionality is $13.5 billion with an estimate of $19.6 billion on the high
end. As a result, we can estimate that it would cost $13-20 billion for all non-federal US hospitals to
achieve Stage 4 functionality. From the ambulatory and acute care cost estimate, we can arrive at the
estimate of a range of $24 - $35 billion that is needed for clinical practices and non-federal acute care
providers to adopt EMRs. For this recommendation, the minimum cost estimate per year is rounded to $5
billion, resulting in an estimated minimum level of funding at $25 billion.
[xxxix] HIMSS Analytics' EMRAM identifies the levels of EMR capabilities of the 5,071 non-federal
medical/surgical US hospitals. EMRAM levels range from Stage 0 – Stage 7. EMRAM Stage O indicates
that a hospital has one or two, but not all three ancillary departmental systems to support the laboratory,
pharmacy, or radiology. EMRAM Stage 4 indicates that a hospital has a clinical data repository, nursing
documentation on at least one unit, remote access to its PACS, and uses computerized practitioner order
entry and decision support protocols on at least one unit other than the emergency department, Stage 7
indicates that a hospital has a paperless EMR environment, the ability to share summary clinical and
administrative information within HIEs,  physician clinics or other hospitals, as well as patients, and
clinical data warehousing and data mining capabilities to analyze their care data to improve protocols and
patient care.

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**Appendix 1**

# Examples of Documented Soft Return on Investment from Use of EMR/EHR Systems[i]

| Category | Examples |
|---|---|
| **Patient Safety** | • Maimonides Medical Center, a 705-bed hospital in New York City, saw problem medication orders drop by 58% and medication discrepancies by 55%.<br>• Through use of an EMR/EHR system, 324-bed Cincinnati Children's Hospital decreased medication errors by 50% and achieved nearly zero mislabeled lab specimens.<br>• At Ohio State University Health Systems, online medication charting errors in transcription dropped to zero for departments using an EMR/EHR system, versus transcription errors of 26% in departments not using the system. |
| **Process Improvement** | • Each physician at University of Illinois Chicago Medical Center saved five hours per week in time spent reviewing resident orders.<br>• Cincinnati Children's decreased the time spent on the medication cycle entering orders, receiving orders, and shortening the care process for patients and staff by 52%.<br>• In Chicago, Riverpoint Pediatrics decreased wait time by 36 minutes in all encounters - a 40% decrease.<br>• Cooper Pediatrics of Duluth, Georgia decreased drug-refill wait times by 42% and lowered turnaround telephone call time by 75% (to less than 20 minutes). |
| **Communications** | • Queens Health Network applies the system for sharing documentation by all staff across the continuum of care, aiding in the elimination of duplication of activities.<br>• Citizens Memorial in Bolivar, Missouri, eliminated the need for transport of documents by making the EMR/EHR system available from any of its care locations and hospital departments. "Message to Nursing" enables physicians to send patient instructions or information to a nurse. |
| **Regulatory Compliance** | • Ohio State University Health System advanced full compliance with institutional policies and bylaws regarding do-not-resuscitate orders and restraint orders.<br>• Cincinnati Children's saw orders permanently unsigned by physicians drop from 40% to around 10% and witnessed a corresponding 24% drop in verbal orders.[ii, iii] |

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[i] All examples are from the Nicholas E. Davies Award.  Established in 1994, the Davies Award – based upon the Baldrige National Quality Program – recognizes excellence in the implementation and value from health IT.  There are four Davies Awards – Public Health, Organizational, Ambulatory, and Community Health Organizations.  http://www.himss.org/davies/index.asp.

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**Appendix 2**

# Examples of Documented Hard Return on Investment from Use of EMR/EHR Systems[i]

| Category | Example |
|---|---|
| **Patient Flow** | • Citizens Memorial of Bolivar, Missouri, saw net patient revenues increase 23%.<br>• Brooklyn's Maimonides Medical Center experienced an increase in emergency department visits – from 57,795 in 1996 to 77,118 in 2002. In addition, length-of-stay declined from 7.26 days in 1995 to 5.05 days in 2001. |
| **Materials and Staff Reductions** | • Evanston Northwestern in Evanston Illinois increased volume equivalent to eliminating 65 full-time employees throughout the corporation, or $4 million in savings. In addition, the hospital reduced personnel in the emergency department, medical records, and billing, and decreased overtime and temporary expenses, resulting in a total savings of $7.78 million.<br>• In Decatur, Illinois, Heritage Behavioral Health saved $473,859 over three years in the following areas: $211,000 for transcription and documentation; $146,000 for chart audit paybacks; and $117,000 for back-office staffing reductions. |
| **Billing Improvements** | • Maimonides saw profits rise from $761,000 in 1996 to $6.1 million in 2001 as a result of improved bill collection.<br>• Chicago's Riverpoint Pediatrics increased collection rates from 52% to 88 % and eliminated claims denied due to coding errors. Insurance payment turnaround time fell from between 30 and 60 days, to approximately 15 days.<br>• Southwest Texas Medical, in Beaumont, saw charges rise from $171 to $206 per patient encounter, a 20% jump. A year after implementation, the clinic's total billable hours increased by $2.1 million, while collections rose $1.4 million.<br>• Citizens Memorial experienced a decrease in accounts receivable for its physicians from more than 80 days to fewer than 50 days by centralizing billing and charging functions, and consolidating the databases of 16 clinics.[ii, iii] |

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[i] All examples are from the Nicholas E. Davies Award. Established in 1994, the Davies Award – based upon the Baldrige National Quality Program – recognizes excellence in the implementation and value from health IT. There are four Davies Awards – Public Health, Organizational, Ambulatory, and Community Health Organizations. http://www.himss.org/davies/index.asp.

[ii] The ROI of EMR-HER Productivity Soars, Hospitals Save Time and, Yes, Money. HIMSS Nicholas E. Davies Award of Excellence. http://www.himss.org/content/files/davies/Davies_WP_ROI.pdf.

[iii] Moving Ahead: EMR-HER Drives Ambulatory Care. HIMSS Nicholas E. Davies Award of Excellence. http://www.himss.org/content/files/davies/Davies_WP_Ambulatory.pdf.

## Appendix 3

# Enabling Healthcare Reform Using Information Technology

## Electronic Medical Record Capabilities and Expected Benefits in US Non-federal Hospitals and Physician Clinics

December 17, 2008

## Overview

Understanding the level of electronic medical records (EMR) capabilities in hospitals and clinics is a challenge in the US healthcare IT market. HIMSS Analytics[TM] has created an EMR Adoption Model[SM] that identifies the levels of EMR capabilities ranging from limited ancillary department systems through a paperless EMR environment in hospitals.

HIMSS Analytics has developed a methodology and algorithms to automatically score the more than 5,000 non-federal, US hospitals in our database relative to their IT-enabled clinical transformation status, to provide peer comparisons for hospital organizations as they strategize their path to a complete EMR and participation in an electronic health record (EHR) or Health Information Exchange initiative.  HIMSS Analytics has also created a similar Ambulatory EMR Adoption Model.  Both of the models—and the expected benefits to be derived from the various stages—follow in this document.

By December 31, 2014, with the proper incentives and funding, we believe it is reasonable to expect that all non-federal US hospitals can reach Stage 4, and all non-federal physician practices can reach Stage 3.

## EMR Adoption Model[SM] for Hospitals and Expected Benefits for Each Stage

The stages of the acute care model, and examples of what healthcare organizations at each of those stages could be expected to achieve in efficiencies and outcomes, are as follows. Note that all benefits by stage are cumulative and will be realized by all higher stages.

**Stage 0:** Not all major ancillary clinical systems are installed (i.e., pharmacy, laboratory, radiology). One or two may be, but not all three.

- *Hospitals of the 60s.*
- *Operational efficiencies for the automated ancillary departments.*
- *Diagnostic results may be available for access by clinicians.*
- *Some base level clinical decision support may be available, such as medication conflict checking in pharmacy systems, or duplicate or inappropriate test monitoring in laboratories.*

**Stage 1:** All three major ancillary clinical systems are installed.

- *Lab and radiology test results can be sent electronically to ordering physician, assuming the lab and radiology systems have that capability built in.*
- *Diagnostic results can be accessed from the various ancillary clinical systems, and single sign-on functions improve the efficiency for accessing results from multiple systems.*

**Stage 2:** Major ancillary clinical systems feed data to a clinical data repository (CDR) that provides physician access for retrieving and reviewing results. The CDR contains a controlled medical vocabulary and the clinical decision support/rules engine. Information from document imaging systems may be linked to the CDR.

- *Ancillary systems can be interfaced to repository to use CDR's results reporting capability – allows physicians remote access to results.*
- *ADT & patient accounting can also be interfaced to repository to enable population of billing records – internal efficiencies for hospitals.*
- *Reliance on the paper chart is significantly reduced for care delivery.*
- *Data can be used to supplement outcomes and business analysis.*

**Stage 3:** Clinical documentation (e.g., vital signs, flow sheets) is required; nursing notes, care plan charting, and/or the electronic medication administration record (eMAR) system are scored with extra points and are implemented and integrated with the CDR for at least one medical/surgical unit in the hospital. The first level of clinical decision support is implemented to conduct error checking with order entry (i.e., drug/drug, drug/food, drug/lab conflict checking normally found in the pharmacy). Some level of medical imaging access from picture archiving and communication systems (PACS) is available for access by physicians outside the radiology department via the organization's intranet or via the Web.

- *Significant efficiencies for nursing – standardization of nursing practice, alerts and reminders, electronic medication administration record integrated with pharmacy system which contributes to reducing medication errors, validating patient histories rather than recreating them, and so on.*
- *Remote access to radiology images helps eliminate duplicate tests, saves physicians from having to drive from home in the middle of the night to read a film of an ER patient.*
- *Adds a significant component of clinical data to further supplement outcomes and nursing protocol analysis.*

**Stage 4:** Computerized practitioner order entry (CPOE) for use by any clinician is added to the nursing and CDR environment along with the second level of clinical decision support capabilities related to evidence-based medicine protocols. If one patient service area has implemented CPOE and completed the previous stages, then this stage has been achieved.

- *Improves patient safety by eliminating medication errors associated with handwriting errors.*

- *Improves patient safety by adding a higher level of clinical decision support at order creation.*
- *Improves billing functions by ensuring all orders for patient services have been captured.*
- *Improves outcomes by eliminating order rework that may delay medication and treatment administration.*
- *Improves formulary compliance for medication orders.*

**Stage 5:** The closed-loop medication administration environment is fully implemented. The eMAR and bar coding or other auto identification technology, such as radio frequency identification (RFID), are implemented and integrated with CPOE and pharmacy to maximize point-of-care patient-safety processes for medication administration.

- *Improves patient safety - reduces or eliminates medication errors.*
- *Improves outcomes by reducing the time from medication order to medication administration.*
- *Improves medication management by identifying potential medication errors that clinicians may not be aware of.*
- *Improves the tracking of all medications dispensed and administered.*
- *Provides a data set to improve the management and administration of medications for use in both outcomes and protocols analyses.*
- *Nurse recruiting and retention are improved.*

**Stage 6:** Full physician documentation/charting (structured templates) is implemented for at least one patient care service area. Level three of clinical decision support provides guidance for all clinician activities related to protocols and outcomes in the form of variance and compliance alerts. A full complement of radiology PACS systems provides medical images to physicians via an intranet and displaces all film-based images.

- *Improves the timeliness and accuracy of physician documentation to support care delivery processes.*
- *Provides a higher level of clinical decision support with physician protocols and therefore improves clinical outcomes.*
- *Eliminates or significantly reduces the costs/expenses for dictation and transcription.*
- *Provides on-line access to all radiological medical images to improve physician consult processes.*
- *May reduce length of stay for many services.*
- *May reduce discharge-not-final-billed days for many services.*
- *May improve a hospital's bond rating.*
- *Creates another data set that further improves the ability to more effectively evaluate clinical outcomes and clinical protocols.*

**Stage 7:** The hospital has a paperless EMR environment. Clinical information can be readily shared via electronic transactions or exchange of electronic records with all entities within a health information exchange (i.e., other hospitals, ambulatory clinics, sub-acute environments, employers, payors and patients) using the Continuity of Care Document (CCD) transaction standard. The hospital is also using clinical data warehousing solutions to improve treatment protocols and review quality outcomes.

- *Paper charts/documents no longer negatively impact patient care relative to access or timeliness of data.*
- *All medical record data is on-line and available to all clinicians via secured access.*

- *All patient care data can be shared with other organizations that are treating the patient using a standard transaction that contains clinical data.*
- *The majority of the patient care data is discrete and provides a rich environment for analyzing clinical outcomes and protocols in a more timely and complete manner.*
- *Quality and outcomes reporting is a by product of the complete EMR environment.*
- *Competitive market advantages are achieved for the population that is served.*

# EMR Adoption Model<sup>SM</sup> for Physician Clinics and Expected Benefits for Each Stage

The stages of the physician clinic model, and examples of what clinics at each of those stages could be expected to achieve in efficiencies and outcomes are as follows. Note that all benefits by stage are cumulative and will be realized by all higher stages.

**Stage 0:** Paper charts are the only means of storing and accessing clinical information (even if there is a computerized billing system), and Web browsers are not routinely used for any clinical purposes.
- *The status quo in the majority of physician offices in the US today.*

**Stage 1:** The clinic provides a Web browser on the physician and/or nurse desktops for access to online reference material, eligibility information, lab results, etc. Permanent electronic storage of chart notes provided after transcription, but notes are only free text. The patient records are accessible from multiple computers via a local area network. Electronic messaging exists for informal, unstructured intra-office communication. Calling/faxing of prescriptions to pharmacies.
- *Physicians have access to clinical protocol and content Websites for researching diagnoses and treatment information.*
- *Clinic offices are more efficient and more profitable.*

**Stage 2:** Computers/handheld device may be at point-of-care but use is partial or optional. Basic medication management—electronic prescribing, maintaining medication lists, refill tracking. Electronically assisted ordering of tests and referrals (but no closed-loop tracking yet). Beginnings of a clinical data repository—ability to search for patients with particular diagnosis or particular medication. Electronic messaging is increasingly relied upon for clinical collaboration.
- *Patient safety increased by legible, computer-generated prescriptions.*
- *Improved patient care with the use of order sets that ensure complete and thorough diagnostic testing based on protocols and clinical guidelines.*

**Stage 3** Computers have replaced the paper chart, are used at the point-of-care, and are mandatory for all clinical documentation (i.e., patient histories). Basic clinical decision support for medication interactions, medication allergies used before patient leaves the office. Electronic import and storage of lab results in structured form. Capture of some structured data from within encounters—vital signs, immunizations, etc. Electronic messaging is a standard means of intra-and inter-office clinical collaboration. Connectivity to hospitals for electronic receipt of discharge summaries, including care plans and transmission of admission documents.

- *Patient safety increased by drug interaction warnings by checking known current medications with medications being ordered to identify and flag any potential interactions.*
- *Savings to clinic practice in management of phone calls, time spent on chart pulls, reduction in transcription staff, new chart costs, reduction in medical records staff and device connectivity – more efficient operations, better service to patients.*
- *Decreases in patient wait time, drug refill time, telephone call turnaround time.*
- *Increases in efficiency of clinicians to be able to see more patients per day and increase in patient volume.*

**Stage 4:** Advanced clinical decision support—protocols, preventive care reminders based on diagnoses, medications, results, orders. Population-based quality measurement and reporting capabilities. Secure messaging and online consultations between physician and patient. Maintenance of an online personal health record for patients. Multiple payor eligibility, claims status inquiry and referral information messaging transactions between physician and payor. Structured messaging between physician, physician staff and payors for automation of disease management cases & communication and reminders to support clinical guidelines.

- *Further reductions in medication errors due to advanced clinical decision support tools.*
- *Physicians able to easily participate in pay-for-performance initiatives due to quality and outcome reporting capabilities.*
- *Clinics lower costs by using electronic data interchange in eligibility, claims, and remittance advice transactions.*

**Stage 5:** Proactive and automated outreach to patients for preventive care and chronic disease management. Proactive searching for patients with particular conditions and medications as new clinical evidence develops. Interconnected regional/community of physicians, hospitals, lab companies, health plans, pharmaceutical industry, imaging companies and patients to easily share and exchange information and collaborate for improved patient care. Capable of sending and receiving Continuity of Care Document transactions with other stakeholders.

- *Physicians now able to move from predominate focus on sick care to wellness and prevention activities with chronic illness patients.*
- *Clinics connected to health information exchanges that share patient encounter information with other providers and feed personal health records for consumers.*

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**Appendix 4**

**Examples of Healthcare Reform Legislation in the 110th Congress**

| Legislation | Sponsor | Summary |
|---|---|---|
| H.R. 1841, the AmeriCare Health Care Act of 2007 | Representative Pete Stark (D-CA) | The AmeriCare Health Care Act of 2007 would make all US residents eligible for benefits under the AmeriCare health plan, require the modification of Medicaid to protect against duplication with the new federal health plan, require the submission of standards electronic claims, promulgate standards for EMRs, and require uniform cost reporting by hospitals.[i] |
| H.R. 3343, the Comprehensive Health Care Reform Act of 2007 | Representative Ron Paul (D-TX) | The Comprehensive Health Care Reform Act of 2007 aims to improve the accessibility and affordability of healthcare coverage through tax credits for health insurance costs and tax deductions for payments to health savings accounts.[ii] |
| S. 334, the Healthy Americans Act (H.R. 3163) | Senator Ron Wyden (D-OR) | The Healthy Americans Act aims to make available the opportunity for every individual to purchase healthcare through the establishment of a Healthy Americans Private Insurance Plan (HAPI). In addition, the legislation would establish school-based health centers, establish Chronic Care Education Centers, and establish state Health Help Agencies (HHA) to carry out initiatives concerning prevention and wellness and the use and understanding of health IT.[iii] |
| S. 3072, the Making Health Care More Affordable Act of 2008 (H.R.5955) | Senator Ron Wicker (R-MI) | The Making Health Care More Affordable Act of 2008 aims to provide comprehensive healthcare reform through tax credits for health insurance costs. The legislation would, among many things, enable small businesses to band together to buy health plans, allow individuals to purchase health insurance across state lines, and provide for certification and auditing of health record banking.[iv] |
| S. 1783, the Ten Steps to Transforming Healthcare in America Act | Senator Michael Enzi (R-WY) | The Ten Steps to Transforming Healthcare in America Act recommends ten steps to transform healthcare in America, through such mechanisms as directing states to automatically enroll uninsured individuals, requiring health insurers in each state to offer certified plans, establishment of the Health Insurance Consensus Standards Board to develop recommendations to harmonize inconsistent state health insurance laws, codification of the Office of the National Coordinator for Health Information technology, establishment of the American Health Information Community, directing the development of healthcare quality measures, and authorizing grants for medical residency programs.[v] |

[i] H.R. 1841, the AmeriCare Health Care Act of 2007. Thomas, The Library of Congress.
http://thomas.loc.gov/cgi-bin/query/z?c110:H.R.1841.
[ii] H.R. 3343, the Comprehensive Health Care Reform Act of 2007. Thomas, Library of Congress.
http://thomas.loc.gov/cgi-bin/query/D?c110:1:./temp/~c110H8gafm.
[iii] S. 334, the Healthy Americans Act. Thomas, The Library of Congress. http://thomas.loc.gov/cgi-bin/query/z?c110:S.334.
[iv] S. 3072, the Making Healthcare More Affordable Act of 2008. Thomas, Library of Congress.
http://thomas.loc.gov/cgi-bin/query/D?c110:1:./temp/~c110PYihVM.
[v] S.1783, Ten Steps to Transform Healthcare In America Act. Thomas, Library of Congress.
http://thomas.loc.gov/cgi-bin/query/D?c110:96:./temp/~c110wQJpaG.

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# Call for Action
# Enabling Healthcare Reform Using Information Technology

## Appendix 5

## FREQUENTLY ASKED QUESTIONS ABOUT HEALTH IT

### The Economy, Employment, Cost Savings

### The US is currently in a recession.  What is the business case for spending money to implement health IT?

According to the McKinsey & Company, the US **healthcare system consumes more than 15% of total expenditures on processing payments**. In addition, it is **estimated that providers spend $100 billion or more a year in managing claims and $150 billion is spent among public and private payors**. While much of the high costs are associated with such activities as contract management and revenue cycle processes, one of the most important factors is the high cost of transmitting paper-based claims and payment of claims among payors and providers.

McKinsey & Company finds that **approximately 60% of all claims payments are paper-based**, involving a paper claims that are sent between payors and providers manually submitting and reconciling claims and depositing checks. As a result, **paper-based claims cost approximately $8 per item**. Each year in the US, the volume of claim payments is 2.5 million. **As the majority of reimbursements are based on paper checks, this costs healthcare $15 - $20 billion a year in postage, processing, and accounting**. It is estimated that **increasing the rate of electronic payment of claims to 90% from the current 40% could save $6 billion or more** across the country.[1]

### What impact will health IT have on the workforce?

**The following information is from Dr. William Hersh, Oregon Health and Science University:** Health IT has the **potential to create jobs**. **Research conducted by Oregon Health & Science University in 2008 showed that to achieve the full benefits of health IT, an additional 40,000 IT professionals will be required**. Although this seems like a large number, it will pay for itself with increased efficiency of the healthcare system.

Investment in health IT also has the potential to ameliorate some of the biggest job casualties of the current economic downturn. Investing in the retooling of IT professionals from other industries to work in health IT will also benefit educational programs that cater to such individuals.

## How did the Workgroup arrive at the recommended figure for non-governmental hospitals and physician practices -- $25 billion?

The figure is **developed from estimates of the current cost for all non-governmental ambulatory and acute care providers to adopt EMRs**. The cost estimates for private sector ambulatory care providers are as follows: Using data from the U.S. Department of Labor's Bureau of Labor Statistics' "Occupational Outlook Handbook, 2008-2009," we can determine that there are approximately **411,450 physicians who are either solo practitioners, partners in, or employed by, physician practices**.  According to "Evidence on the Costs and Benefits of Health Information Technology," by the Congressional Budget Office (CBO), **12% physicians in ambulatory practice have an EMR in their practice**.

Between these two data points, we can postulate that the 88% of physicians in private practices without EMRs equates to a number of 362,076.  In addition, in reports by the American Academy of Family Physicians Center for Health Information Technology entitled "Partners for Patients Electronic Health Record Market Survey" and "Medical Groups' Adoption of Electronic Health Records and Information Systems," by Gans et al, we are able to derive **a cost estimate between $30,000 and $33,000 per physician for a practice to adopt an EMR system**.

From the estimations of physicians in physician practices in the US, and the average cost of an EMR per physician, **we can estimate that the initial cost of for these 362,076 physicians to adopt an EMR is $11.94 billion**. In addition, **according to "Can Electronic Medical Record Systems Transform Health Care: Potential Health Benefits, Savings, and Cost," by Hillestad et al., published in the September/October 2005 edition of** *Health Affairs***, the authors estimate that to achieve a 90% adoption of EMRs among physician practices would cost $17.2 billion over 15 years**.

Given the successes in EMR adoption to date, this number can be assumed to have lessened over the past three years. Using these data sources, **we can determine that the cost estimate for all physicians working in physician practices to adopt an EMR is between $11-15 billion**. The cost estimates for acute care providers are as follows: **HIMSS Analytics estimates that the low-end estimate for all civilian US hospitals to achieve a "Stage 4" functionality is $13.5 billion with an estimate of $19.6 billion on the high end**. As a result, we can **estimate that it would cost $13-20 billion for all non-federal US hospitals to achieve Stage 4 functionality**. From the ambulatory and acute care cost estimate, we can arrive at the estimate of a range of $24 - $35 billion that is needed for clinical practices and non-federal acute care providers to adopt EMRs. **For this recommendation, the minimum cost estimate per year is rounded to $5 billion, resulting in an estimated minimum level of funding at $25 billion**.

## What is the estimated total cost savings from implementing health IT?

HIMSS' Nicholas E. Davies Award of Excellence documents both hard and soft return on investment for health IT acquisitions. This documentation is available in four healthcare settings:  Organizational (hospitals & IDNs); Ambulatory; Community-Health Organizations; and, Public Health.  The Award has been in existence for more than 10 years and has a rich library of resources publicly available.

Two published studies – both from 2005 – focused on the *potential* savings from the widespread,

appropriate use of health IT: RAND Corporate and the Center for Information Technology Leadership (CITL).

Finally, the Congressional Budget Office (CBO) published an analysis in 2008 that reviewed all available, published research regarding costs and savings of IT in healthcare.

## In early December 2008, The Joint Commission issued a warning that the implementation of technology and related devices is not a guarantee for success of healthcare, and may actually jeopardize the quality and safety of patient care.

Health IT is not a panacea. However appropriately implemented – and used effectively – it can improve quality, decrease costs, and save lives. To improve the quality and safety of care through IT, healthcare entities must engage stakeholders in the acquisition and change management processes, and train their staffs to use the systems.

## Is there any proof that health IT actually does improve quality, and reduce errors and costs?

Yes. Since 1994, the HIMSS Nicholas E. Davies Organizational Award of Excellence has recognized excellence in the implementation and derived value of health information technology. Its original and continuing mission is to promote the value of, and provide education about, full implementation of electronic health records (EHRs). The award launched with a focus on hospitals and health systems, and expanded to include physician practices, public health organizations, and most recently, community health organizations.

The Davies Award examines the actual use of HIT based on a set of rigorous criteria including pervasive use of the electronic medical record as the primary source of care information, practitioner order entry, clinical decision support, and documented organizational improvement in patient safety and quality outcomes.

Davies Award recipients must supply documented evidence on the return on investment (ROI) from their utilization of Health IT. Two types of measurements are consistently described; quantifiable returns that can be demonstrated in financial terms and measurable process improvements as well as ROI derived from reduction of medication error, point of care decision support, access to important patient information when and where it is needed and aggregated data analysis.

A very few examples of documented return on investment experienced by recent Davies Award recipients include the following. The Davies Award has been in existence for more than a decade – there are many additional examples available.

At Northshore University Health System in Evanston Illinois, errors and near-misses caused by transcription errors – which, prior to implementation – used to represent 42 percent of total errors, were eliminated.

Allina Hospitals and Clinics in Minneapolis anticipate a $65 million in return on investment from their health IT, once it is fully rolled out to all facilities.

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Thanks to appropriately implemented health IT, Wayne Obstetrics and Gynecology in Jessup Georgia increased the number of patients clinicians could see by 225 percent – while reducing the hours clinicians spent documenting patient encounters. More time with patients – less time with paperwork.

And, in the Cherokee Indian Hospital Authority, post-implementation the Nation was able to achieve tangible improvements in public health in many areas: increased use of screenings for tobacco use, domestic violence, and cervical and breast cancer; assessments alcohol use and dependence among women of child-bearing age, provision of pneumovax to citizens over the age of 65, higher percentages of citizens with an LDL in goal range, and assessment of hypertension resulting in reductions in the percentage of patients with uncontrolled hypertension.

## ELECTRONIC MEDICAL RECORDS ADOPTION MODEL

### What is the EMR Adoption Model?

HIMSS Analytics, the HIMSS research arm, surveys **every non-federal medical/surgical hospital in the US every year**, and gathers comprehensive data on the hospitals' use of healthcare IT. It has created a model for measuring the progress that American hospitals are making in the implementation and use of electronic medical records, and, in a word, the progress is "slow."

The EMR Adoption Model shows, as of September 30, 2008, only **4.3 percent of American non-federal hospitals are at Stage 4 and above**, meaning those that have gone beyond having a clinical data repository and nursing documentation implemented, and have computerized practitioner order entry and full clinical decision support on at least one in-patient unit, closed loop medication administration on at least one in-patient unit, physician documentation on at least one in-patient unit, or the ability to fully populate a Continuity of Care Document standard transaction to other stakeholders in a health information exchange and the ability to use data warehousing and data mining tools to analyze patient data to create and improve protocols.

We have a long way to go.

### Please explain the stages of the EMR Adoption Model.

HIMSS Analytics' EMRAM identifies the levels of EMR capabilities of the 5,071 non-federal medical/surgical US hospitals. EMRAM levels range from Stage 0 – Stage 7.

**Stage 0: Some clinical automation may be present**, but all three of the major ancillary department systems for laboratory, pharmacy, and radiology are not implemented.

**Stage 1:** All three of the **major ancillary clinical systems** (pharmacy, laboratory, radiology) are **installed**.

**Stage 2: Major ancillary clinical systems feed data to a clinical data repository (CDR) that provides physician and other clinician access for retrieving and reviewing results**. The CDR contains a controlled medical vocabulary (CMV), and the clinical decision support/rules engine (CDSS) for rudimentary conflict checking. Information from document imaging systems may be linked to the CDR at this stage.

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**Stage 3: Clinical documentation (e.g., vital signs, flow sheets) is required; nursing notes, care plan charting, and/or the electronic medication administration record (eMAR) system are scored with extra points, and are implemented and integrated with the CDR for at least one service or one unit in the hospital**. The first level of clinical decision support is implemented to conduct error checking with order entry (i.e., drug/drug, drug/food, drug/lab conflict checking normally found in the pharmacy). Some level of medical image access from picture archive and communication systems (PACS) is available for access by physicians via the organization's intranet or other secure networks outside of the confines of the radiology department.

**Stage 4: Computerized practitioner order entry (CPOE) for use by any clinician is added to the nursing and CDR environment along with the second level of clinical decision support capabilities related to evidence-based medicine protocols**. If one patient service area (not counting the Emergency Department) has implemented CPOE and completed the previous stages, then this stage has been achieved.

**Stage 5: The closed loop medication administration environment is fully implemented in at least one patient care service area**. The eMAR and bar coding or other auto identification technology, such as radio frequency identification (RFID), are implemented and integrated with CPOE and pharmacy to support the five rights of medication administration, thereby maximizing point of care patient safety processes.

**Stage 6: Full physician documentation/charting (using structured templates) is implemented for at least one patient care service area**. Level three of clinical decision support provides guidance for all clinician activities related to protocols and outcomes in the form of variance and compliance alerts. A full complement of radiology PACS systems provides medical images to physicians via an intranet and displaces all film-based images. If a hospital has cardiology PACS, extra points are given.

**Stage 7: The hospital has a paperless EMR environment**. Clinical information can be readily shared via continuity of care (CCD) electronic transactions with all entities within health information exchange networks (i.e., other hospitals, ambulatory clinics, sub-acute environments, employers, payors and patients). This stage allows the healthcare organization to support the true sharing and use of health and wellness information by consumers and providers alike. Also at this stage, healthcare organizations use data warehousing and mining technologies to capture and analyze care data, and improve care protocols via decision support.

## What are the benefits of achieving Stage 4?

The benefits of Stage 4 are as follows:

- Improves patient safety by eliminating medication errors associated with handwriting errors.
- Improves patient safety by adding a higher level of clinical decision support at order creation.
- Improves billing functions by ensuring all orders for patient services have been captured.
- Improves outcomes by eliminating order rework that may delay medication and treatment administration.
- Improves formulary compliance for medication orders.

For more information, read HIMSS Analytics' EMR Adoption Description and Outcomes, which is available online at www.himss.org/2009CalltoAction


## PRIVACY AND SECURITY

### What does HIMSS recommend to address privacy and security issues?

Today, the current legal and regulatory landscape surrounding the use and disclosure of PHI poses many challenges to achieving the benefits of the use of electronic health data to achieve cost, quality and safety benefits.

In an effort to address many of the challenges pertaining to the privacy and security of PHI, the federal government has supported initiatives to examine state and federal laws and regulations that pertain to the privacy and security of personal health information. Examples of these initiatives include:

- The Health Information Security and Privacy Collaboration (HISPC),
- The State Alliance for e-Health, and
- The State-level HIE Consensus Project.

In addition, the Federal Government has facilitated privacy and security implementation challenges thorough programs like CCHIT and HITSP.

To fully achieve the widespread exchange of health information throughout the US that provides for the privacy and security of PHI, **it is that the policy makers not only continue to support these initiatives but also to ensure that legislative, regulatory and industry best practices solutions are all leveraged in the most effective way possible to address the complex challenges concerning the privacy and security of PHI.**

With regard to determining the need for legislative action on privacy, HIMSS' report recommends the following:

**Conduct a Study and Develop a Roadmap for the Appropriate Uses of Personal Health Information:**
- The US Congress should direct the Secretary of HHS to **complete a study within one year on the current legal and regulatory environment affecting the uses and disclosures of electronic personal health information**.
- This **study should include HIPAA, state privacy laws, and other applicable federal and state laws and regulations (e.g., financial, fair information practices, consumer protection, etc.)**. The study should **review the work of the Office of the National Coordinator for Health Information Technology (ONC), the Health Information Security and Privacy Collaboration (HISPC), HITSP, and relevant work from other organizations**.
- The study should result in the timely **development of a pragmatic roadmap or framework** concerning the appropriate uses and disclosures of **personal health information** and any policy recommendations necessary to support the exchange of health information between public and private sectors.
- The study should be facilitated by the senior health IT leader within the Administration and carried out by a balanced representation of healthcare, patient and information technology

stakeholders.

## What are the challenges to HIPAA and privacy and security?

The **Health Insurance Portability and Accountability Act (HIPAA)** addresses security and privacy regulations pertaining to the **uses and disclosures of personal health information by Covered Entities (healthcare providers, health plans, or healthcare clearing houses**) for Treatment, Payment and Operations (commonly known as "TPO").

There are several well recognized concerns relating to the applicability of HIPAA regulations, which regulate organizations, to the current environment of data exchange.

**State privacy laws and regulations often impose stricter regulations**. Also, HIEs as entities are not covered by HIPAA. These may be among the reasons that the possibility of interstate electronic HIE thus far has been difficult to achieve. In addition, providers' lack of knowledge and awareness concerning the appropriate use and disclosure of PHI could result in a reluctance to use the health IT that would result in the overall improved efficiency of healthcare.

**Additional challenges concerning the privacy and security of PHI** arise as new entities engaged in HIE and the storage of and access personal health information that are not covered by HIPAA and also do not have contractual relationships with CEs but **offer a health IT solution direct to consumers**, **such as personal health records (PHRs)**. **Such offerings facilitate a migration of PHI outside of the traditional healthcare system and such a scenario is considered by some to pose great risk to consumers in ensuring the privacy and security of their health information. Yet the issue of how to govern/regulate such entities is still to be considered.**

## HEALTH IT CERTIFICATION AND STANDARDS

## What is HITSP?

Since its inception in 2005, through an ONC contract with the American National Standards Institute (ANSI), **the Healthcare Information Technology Standards Panel (HITSP)** has been leading the national effort to **harmonize interoperability standards to facilitate the exchange of patient data**.

The **mission of HITSP is to serve as a cooperative partnership between the public and private sectors to achieve a widely accepted and useful set of standards** to enable the widespread interoperability among healthcare software applications, as they will interact in a local, regional and nationwide HIE.

HITSP's harmonization work has **addressed such areas as EHRs, biosurveillance, consumer empowerment, medication management, quality and population health**.

HITSP is **comprised of 558 member organizations, including Standards Development Organizations (SDOs), non-SDOs, government bodies, consumer groups, and is administered by a Board of Directors**.

Once **HITSP Interoperability Specifications** are recognized by the HHS Secretary, they are **used to inform the Certification Commission for Healthcare Information Technology (CCHIT) product certification criteria**. Additionally, **Federal Agencies must adopt them according to an August 22, 2006 Executive Order**. Specifically, each agency that implements, acquires, or upgrades health information technology systems used for the direct exchange of health information between agencies and with non-federal entities shall utilize, where available, health information technology systems and products that meet recognized interoperability standards (e.g., HITSP Interoperability Specifications).

HITSP is also playing an **integral role in the development of a Nationwide Healthcare Information Network (NHIN)** for the US by **providing components of health information exchange for the NHIN specification process**. As these building blocks for health information exchange get implemented in healthcare IT systems, clinicians and consumers will be able to access health information wherever and whenever needed, thus improving the efficiency and quality of care and enhancing public health and reporting.

## What is CCHIT?

The **Certification Commission for Healthcare Information Technology (CCHIT)** is a recognized certification body for electronic health records and their networks. CCHIT is a private, nonprofit initiative who mission is to accelerate the adoption of robust, interoperable healthcare information technology throughout the US by creating an efficient, credible, sustainable mechanism for the certification of healthcare products.

To date, **CCHIT has certified more than 150 EHR products, representing 50% of all vendors in the market and 75% of the overall EHR market to date**.[ii] The work of CCHIT has **helped streamline the EHR market by serving as a trusted source to guide providers** when adopting health IT products. CCHIT has also aided in **fostering interoperability among products through implementation of its standards-based criteria**.

## STATE HEALTH IT INITIATIVES

### What role will states play in the implementation of health IT?

In many ways, states are leading the way. States have taken significant steps during the past two years to address policy issues associated with health IT. **From January 2007 through August 2008, more than 370 bills with provisions relating to health IT were introduced in state legislatures**, according to the National Conference of State Legislatures (NCSL). A report released last week by the NCSL states **132 bills with health IT content were enacted in 44 states and the District of Columbia**. This represents a more than threefold increase compared to 2005 and 2006, during which 36 bills were enacted.

### What states are leading the way?

**Indiana**
SB 511, 2007 (Enacted 5/2/2007)

**Establishes the Indiana Health Informatics Corporation** to ensure and improve the health of the citizens of Indiana by encouraging, facilitating and assisting in the development and operation of a statewide system for the electronic exchange of health care information. The **bill defines the corporation's membership and establishes the Indiana health informatics fund**.

The corporation shall, among other things **define a vision for statewide health information exchange system** to electronically exchange health care information between entities in a health care system; prepare a plan to create a statewide health information system; **encourage and facilitate the development and operation of a statewide health information exchange system**; review efforts in other states concerning health information exchange; and encourage and endorse interoperability standards. **Call for compliance with HIPAA**.

### Minnesota
HB 1078, 2007 (Enacted 5/25/2007)
**Requires all hospitals and healthcare providers to have interoperable electronic health systems by Jan. 1, 2015**. Updates the state's health privacy laws to allow for record locator services and for providers to electronically represent patient consent. Patients can choose not to participate in the record locater system in total or can have specific provider contacts excluded from the system. **Requires a health information exchange that operates a record locater system to establish an audit log of providers who access information in the system**.

Establishes **penalties for providers and health information exchanges that release a patient's record without proper authorization**. Creates a revolving account and loan program for the purchase of interoperable electronic health record systems. Requires all group purchases and health care providers to electronically exchange, in standard form, the following: eligibility, claims, payment and remittance advice.

### Texas
HB 1066, 2007 (Enacted 6/15/2007)
Establishes the Texas Health Services Authority as a public-private collaborative to promote development of a seamless electronic health information infrastructure. The corporation shall promote, implement and facilitate the voluntary and secure electronic exchange of health information and create incentives. Unless continued, the corporation will be abolished on Sept. 1, 2011. The corporation will be governed by a board of 11 directors appointed by the governor. The corporation may: establish a statewide health information exchange; seek funding; support regional health information organizations initiatives; and identify standards. Also lists acts in which the corporation may NOT engage, including comparing or rating physicians and providing protected de-identified data for research.

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[i] "Overhauling the US Health Care Payment System". McKinsey & Company. Available at:
http://www.mckinseyquarterly.com/Overhauling_the_US_health_care_payment_system_2012
[ii] "A Tipping Point for Healthcare IT, Says HHS". ChannelWeb. Available at: http://www.crn.com/healthcare/212100341

The full text of this report, "A Call for Action: Enabling Healthcare Reform Using Information Technology," is available online at www.himss.org/2009 Call for Action. This report was developed by over 100 volunteer HIMSS members and other interested stakeholders who spent over four months on specific recommendations. Five sub-groups supported the deliberations of the workgroup, focusing on areas of access, quality, cost, consumer empowerment, and privacy and security. Co-Chairs of the sub-groups, along with co-chairs of the workgroup and representatives from partner organizations, made up the Conference Committee. The Conference Committee worked to harmonize all recommendations and finalize the final report. Recommendations were then vetted by all HIMSS volunteer committees and the HIMSS Advocacy & Public Policy Steering Committee, and were approved by the HIMSS Board of Directors.

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