

# Health for *Life*

Better Health  
Better Health Care

## National Framework for Change



## Best Information

Health information can improve the quality, efficiency and safety of patient care by supporting providers and consumers in making the best diagnostic and treatment decisions.<sup>1,2</sup> Health care providers rely upon patients' medical data when choosing tests and treatment plans. Consumers can use information available through Web-based tools, including results from their own lab tests, their diagnoses and medication lists, and prevention guidelines, to help them manage their own care.<sup>3</sup>

Health information technology (IT) supports the collection, aggregation and dissemination of this health data. Health IT also enables the sharing of health information between points of care, a process referred to as health information exchange. For example, electronic health records – often referred to as EHRs – and personal health records are increasingly used to support health information exchange. These tools are electronic compilations of a patient's health and medication history, provider visits, treatment plans and diagnostic information, such as lab and radiology results. Providers enter information into

an electronic health record, whereas patients are the primary source of information entered into a personal health record.

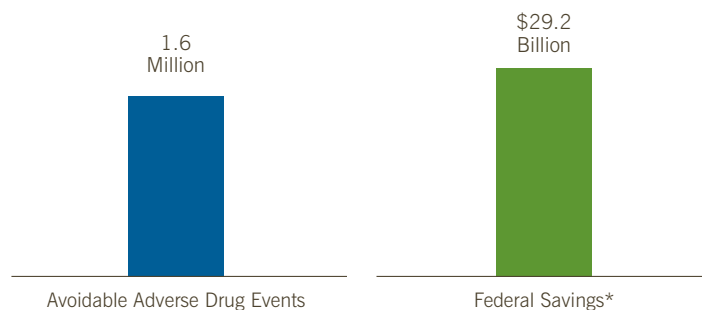
By allowing full and fast access to medical information, health IT tools both enable information sharing among a patient's various providers and aid clinical decision-making at the point of care.<sup>4</sup> Health IT also can help eliminate medical errors.<sup>5</sup> For example, another health IT tool, electronic prescribing, allows a physician to send prescriptions

instantly to patients' pharmacies and also alerts physicians to potential drug interactions or dosing errors.

Health IT and health information exchange, in general, offer many benefits to both the individual patient and the larger health care system. In particular, the use of health IT and health information exchange can improve the quality of patient care, empower patients by supporting open communication with providers,<sup>6</sup> increase patient safety and save money for the system.<sup>7</sup>

## Health IT has the potential to improve patient safety and lower costs...

Chart 1: Potential Adverse Drug Events Avoided and Associated Federal Cost Savings over a 10-year Period from Electronic Prescribing



\*Federal savings due to electronic prescribing for all Medicare Part D prescriptions.

Source: Pharmaceutical Care Management Association. (2007). *Options to Increase E-Prescribing in Medicare: Reducing Medication Errors and Generating Up to \$29 Billion in Savings*. Chicago, IL.



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“ ”  
*from the field*

“The use of electronic health records and other information technology will transform our health care system by reducing medical errors, minimizing paperwork hassles, lowering costs and improving quality of care.”

– Health and Human Services Secretary Michael Leavitt

## Health Information Technology Is Underutilized Across the Health Care System

Even though the benefits of health information technology and health information exchange are well recognized, health care providers are slow to move away from paper-based systems. For example, in a 2006 survey by the American Hospital Association, 68 percent of hospitals reported having fully or partially implemented electronic health records.<sup>8,9</sup> In addition, physician adoption of electronic health records is low: 13 and 21 percent among physicians in solo and group practices respectively.<sup>10</sup>

Multiple factors limit the adoption of health IT. The cost of implementing and maintaining health IT tools is considered the greatest barrier to provider adoption.<sup>11,12</sup> Currently, providers do not receive additional reimbursement for the time they spend learning and using information technologies or analyzing the information generated by those technologies.

Moreover, the incentives to adopt health IT are misaligned. The physicians and hospitals that pay for these technologies often are not the ones who receive the greatest or most direct financial benefit. For example, when a clinic installs electronic health records and electronic prescribing tools, the patient's health plan or employer

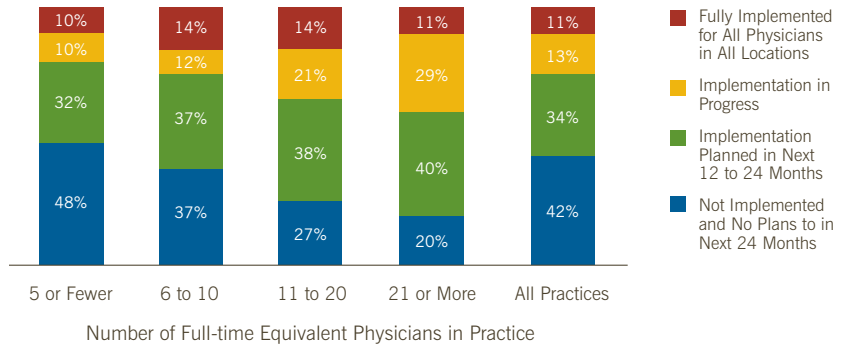
**68%**

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Percent of hospitals with fully or partially implemented electronic health records

### ...but low rates of physician adoption of health IT limit benefits.

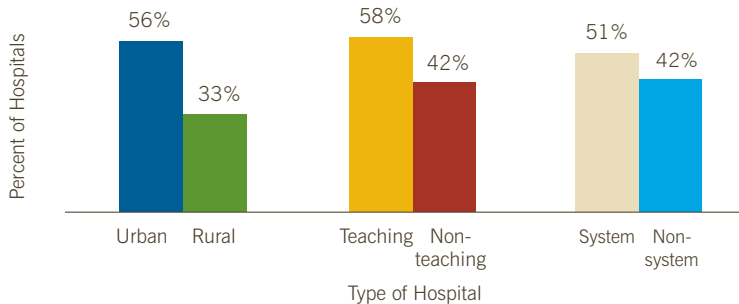
Chart 2: Degree of Electronic Health Record Implementation by Physician Practice Size



Source: Gans, D., et al. (2005). Medical Groups' Adoption of Electronic Health Records and Information Systems. *Health Affairs*, 24(5), 1323-1333.

### Hospitals' use of health IT varies ...

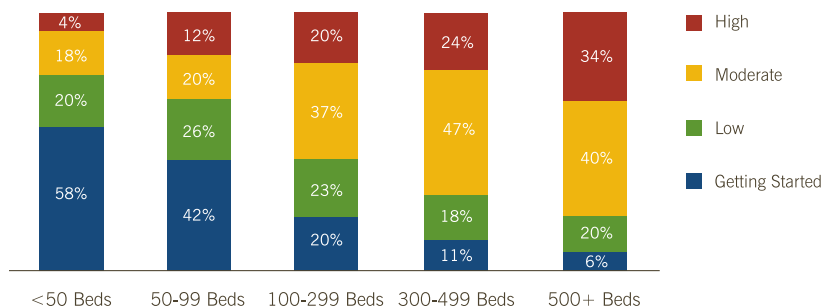
Chart 3: Percent of Hospitals with "Moderate" to "High"\* Levels of Health IT Use by Hospital Type



\*Level of health IT use is defined as number of fully implemented functions (e.g., drug interaction alerts, order-entry). Moderate is defined as 8-11 functions, while high is defined as 12-15 functions.  
Source: American Hospital Association. (2007). *Continued Progress: Hospital Use of Information Technology 2007*. Washington, D.C.

### ...with lower levels of adoption by small hospitals.

Chart 4: Level of Health IT Use\* by Hospital Size, 2006



\*Level of health IT use is defined as number of fully implemented functions (e.g., drug interaction alerts, order-entry). High is defined as 12-15 health IT functions, moderate is defined as 8-11 functions, low is defined as 4-7, and getting started is defined as 0-3.  
Source: American Hospital Association. (2007). *Continued Progress: Hospital Use of Information Technology 2007*. Washington, D.C.

**Cost is the most significant implementation barrier for physicians...**

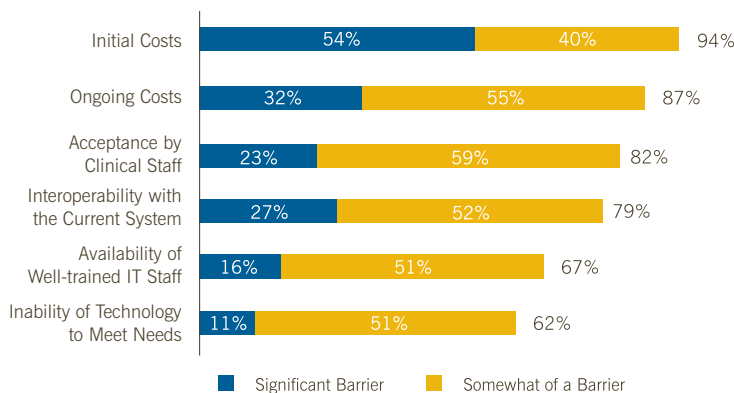
Chart 5: Top 6 Barriers for Physician Implementation of Electronic Health Records (EHRs)

Rank	Barrier
1	Lack of capital resources to invest in an EHR
2	Concern about physicians' ability to input data into an EHR
3	Concern about lost productivity during transition to an EHR
4	Inability to easily input historic medical record data into an EHR
5	Limited consensus on EHR value/usefulness across practice physicians
6	Insufficient return on investment from EHR system

Source: Gans, D., et al. (2005). Medical Groups' Adoption of Electronic Health Records and Information Systems. *Health Affairs*, 24(5), 1323-1333.

**...while hospitals report cost as the greatest barrier to health IT adoption.**

Chart 6: Percent of Hospitals Indicating a Barrier Is a "Significant Barrier" or "Somewhat of a Barrier" to Health IT Adoption, 2006



Source: American Hospital Association. (2007). *Continued Progress: Hospital Use of Information Technology 2007*. Washington, D.C.

often receives the most direct benefits through savings resulting from better care management and less duplicative care, decreased absenteeism and increased worker productivity.<sup>13</sup>

Beyond cost, the lack of uniform standards among these technologies also has slowed widespread health IT adoption and broad use of health information exchange. Standards are the accepted technical specifications that allow data to be understood by two different information systems.<sup>14</sup> Over the years, membership associations as well as individual hospitals and health systems have developed their own standards in response to their particular needs. As a result, there are many health IT data standards in use today, but no single set that allows for the accurate, effective and consistent exchange of electronic information across care settings – a concept referred to as interoperability. Consequently, in many cases an electronic health record used today by one provider, such as a doctor or hospital, cannot easily share information with the record of another provider.<sup>15</sup>

This lack of clear standards and poor interoperability is an obstacle for physicians, who may hesitate to invest in health IT systems for fear they will choose the “wrong” one. They also may lack the knowledge and information to evaluate which IT application would best meet the needs of their practice.<sup>16</sup>

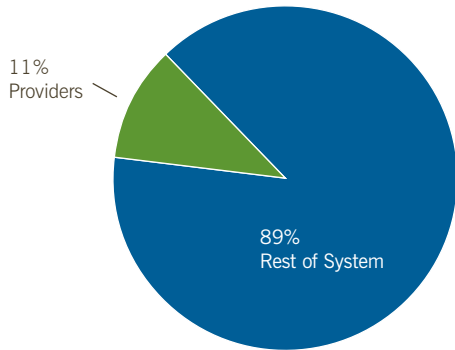
Further complicating information exchange is the lack of a standard way

“ ”  
from the field

“We must move quickly to adopt a unified set of open interoperable standards for data exchange. Americans are demanding a 21st Century Intelligent Health System.”  
– Newt Gingrich, Former Speaker of the House

**While providers pay the costs of health IT, others derive most of the benefits.**

Chart 7: Percent of Savings from Implementation of Computer-based Provider Order-entry\* Systems for Providers versus the Rest of the System



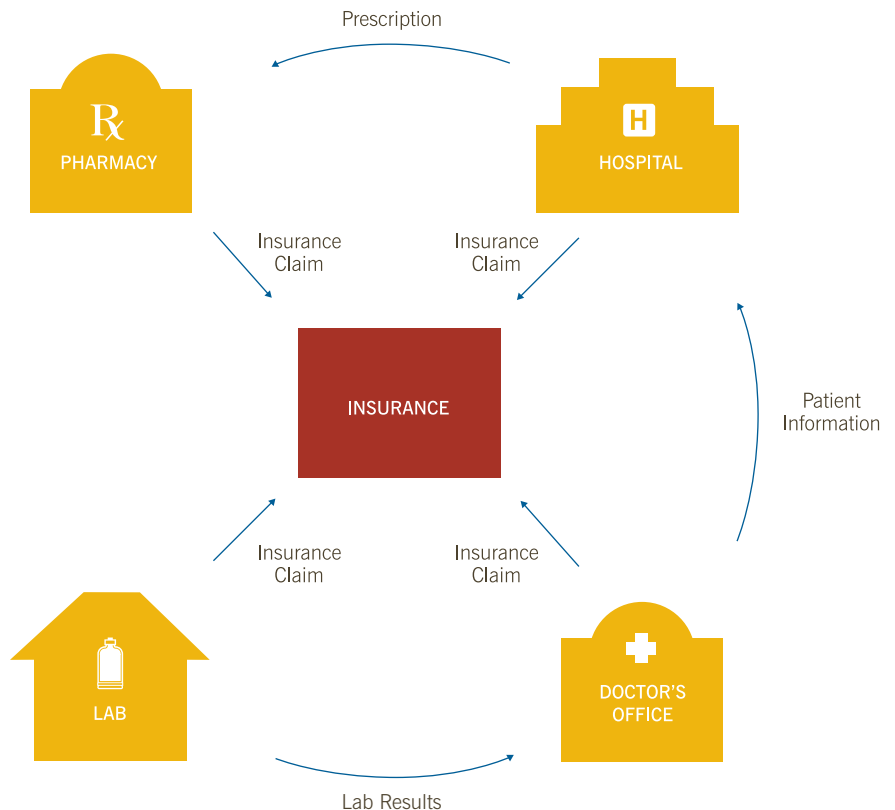
to uniquely match a patient with his or her medical records across the various places a patient may receive care (e.g., a unique patient identification number). Systems must ensure that the Jane Smith seen by one physician is the same Jane Smith whose medical record is accessed by another provider. Many political and logistical challenges stand in the way of the creation of a unique patient identifier. In addition, confidentiality and security issues and legal considerations around the exchange of personal health information pose concerns for providers, patients, businesses and insurers.

\*Computer-based or Computerized Provider Order-Entry (CPOE) is a computer system that allows direct entry of medical orders by a health care provider and contains some of the same functions as an EHR. Source: Center for Information Technology Leadership, (2003). *The Value of Computerized Provider Order Entry in Ambulatory Settings*. Wellesley, MA.

**Many types of information are exchanged during a single health care visit...**

Chart 8: Simplified Data Transmission Scenario for One Patient\*

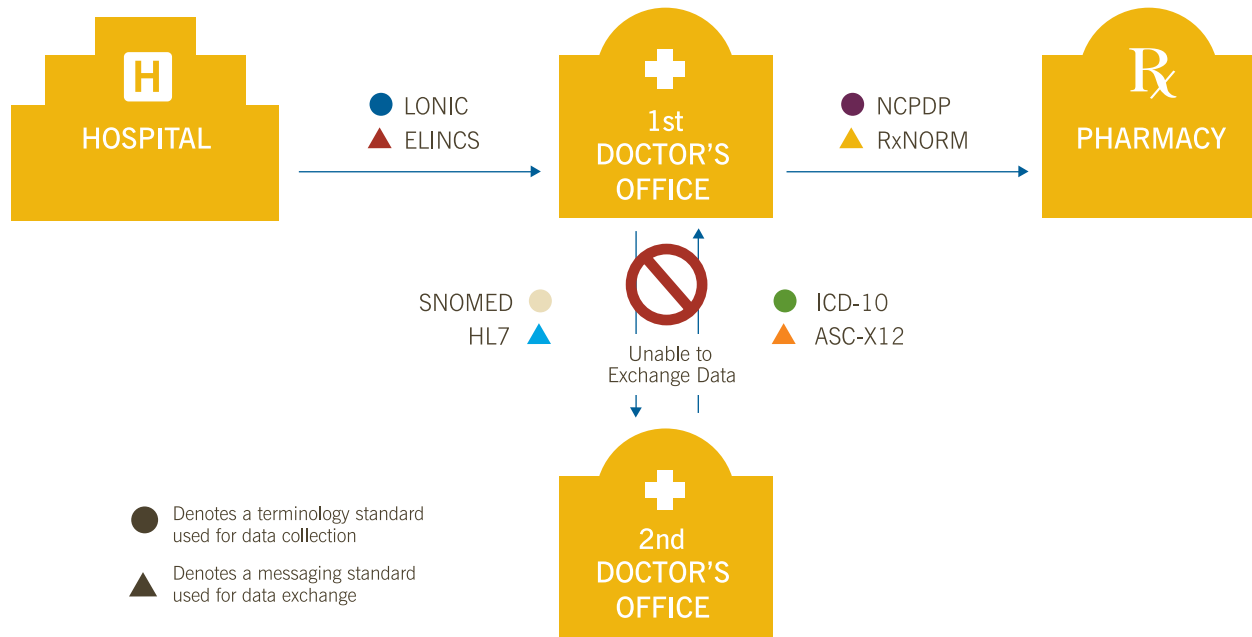
1. Patient goes to doctor for a clinical exam
2. Physician orders blood tests, sends patient to lab
3. Lab draws blood, runs tests, sends results to physician
4. Results indicate patient needs surgery, doctor sends patient's previous care summary and medical exam to surgeon
5. Post-surgery, patient is prescribed medication, prescription is sent to pharmacy, where patient receives medication



\*This scenario does not take into account the typical number of payors, hospitals, labs, pharmacies and physicians that could be involved in the health care situation. Source: The National Alliance for Healthcare Information Technology. (2007). Standards in Action. Available at <https://www.nahit.org>.

**...but even organizations with health IT capabilities cannot easily share that data without using the same standards.**

Chart 9: The Data Standards Involved When a Patient Seeks Care from Multiple Providers



Source: Avalere Health analysis based on The National Alliance for Healthcare Information Technology. (2007). *Standards in Action*. <https://www.nahit.org>.

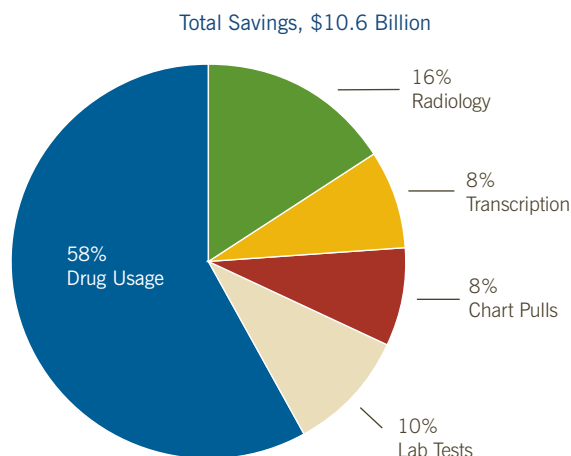
## Health Information Technology Will Help Improve Patient Care

In a recent survey of health care opinion leaders, health IT adoption was viewed as the most promising strategy for improving the quality and safety of health care.<sup>17</sup> Quite often, a health care provider prescribing a course of treatment may be unaware of the care or medications administered by another. In one survey of U.S. adults, 19 percent reported that their providers did not share important medical information with their other providers.<sup>18</sup> Health IT applications, such as electronic health records, can promote care coordination by allowing timely access to a patient's medical and medication history among the various places a patient receives care.

Other technologies, such as personal health records, also can help patients

### Health IT could save money for the health care system.

Chart 10: Potential Average Yearly Savings from Adoption of Electronic Health Records in Outpatient Setting by Source



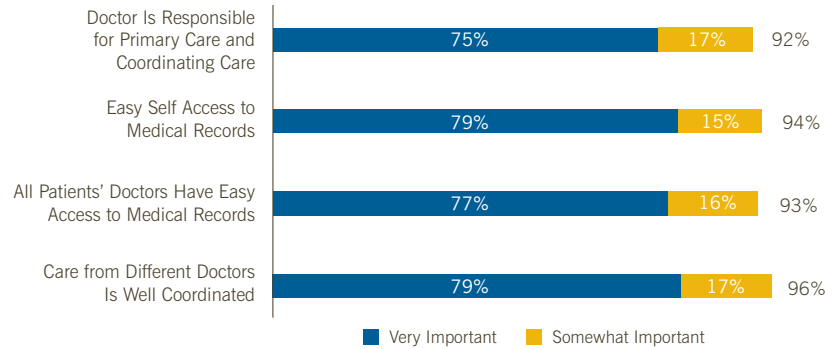
Source: Girosi, F., et al. (2005). *Extrapolating Evidence of Health Information Technology Savings and Costs*. Santa Monica, CA: RAND Corporation.

manage their chronic conditions, such as asthma and diabetes, by involving patients in their own care.<sup>19</sup> Additionally, ongoing research shows that health IT, such as electronic prescribing, electronic order-entry and electronic health records, can reduce medical errors and adverse drug events, or injuries due to medication,<sup>20</sup> by improving and streamlining the prescription process and decreasing the number of illegible and incomplete prescriptions.<sup>21,22</sup> These applications also can alert physicians to potential drug interactions or patient allergies,<sup>23</sup> and allow physicians to respond more rapidly to drug recalls. For example, the FDA encourages drug manufacturers to use electronic communication methods, including email, fax and text messaging, to notify physicians and consumers of drug recalls.<sup>24</sup>

Health IT tools also promote better communication between patients and providers. Personal health records can encourage regular patient and physician communication about medications and medical conditions. These and other tools can also send treatment and prevention reminders to patients and streamline the prescription refill process. This allows patients to play a more active role in monitoring their own health and health care and is increasingly recognized as an essential component of health care delivery.<sup>25</sup>

**There is strong public support for doctors to have easy access to all of a patient's medical records.**

Chart 11: Percent of Adults Reporting that a Specific Action Is “Very Important” or “Somewhat Important” to Improving Care Delivery



Source: Schoen, C., et al. (2006). *Public Views on Shaping the Future of the U.S Health System*. New York, NY: The Commonwealth Fund.

By improving access to information at each place a patient receives care, health IT can reduce duplicative tests and increase administrative efficiencies. For example, when physicians do not have timely access to a patient's current medical history, they may order extra services, such as lab tests or X-rays, which were recently performed by another provider. In a 2006 survey, 17 percent of respondents reported that their provider had ordered a test that had recently been conducted.<sup>26</sup>

Health IT systems can help patients navigate the health care system. It can help patients track pieces of their own health information, such as dates of

previous surgeries, allergies and current medications. And, if a patient's complete medical record is available to each provider, the patient and the provider can avoid everything from redundant paperwork to duplicative tests.

The public supports granting providers access to personal medical information. In a recent survey, 93 percent of adults responded that it is important for all of their doctors to have easy access to their medical records.<sup>27</sup> In addition, the majority of the 2008 presidential candidates, both Democrat and Republican, have health care reform proposals that include health IT as a central component.

## Opportunities Exist to Improve the Health Care System Using Health Information Technology

Many initiatives are under way to increase the adoption of health IT due to its potential to improve care delivery. Various efforts at the federal, state and local levels, and in the private sector, offer models for future consideration.

The federal government is actively supporting and promoting health IT

adoption. Examples of federal activities include the following:

- Evaluating electronic health records to ensure they offer a minimum set of functions and can connect and communicate with other health IT systems.<sup>28</sup>
- Convening stakeholders to agree upon

health IT standards that can be used across all health care settings.

- Assisting communities to develop information exchange networks.<sup>29</sup>
- Helping physicians invest in health IT.<sup>30</sup>
- Supporting the use of health IT tools by Medicaid programs.

- Giving Medicare beneficiaries access to personal health information on-line.<sup>31</sup>

There are several efforts at the state level focused on encouraging health IT adoption and promoting health information exchange across state lines. The State Alliance for eHealth brings together state legislators to address differences in state data sharing laws to lower barriers to inter-state data sharing.<sup>32</sup> The Health Information Security and Privacy Collaborative (HISPC) is supporting 33 states and one territory in identifying best practices for ensuring privacy and security of personal health information.<sup>33</sup>

At the local level, communities are working together to build the infrastructure needed for the electronic exchange of health information. Regional Health Information Organizations (RHIOs) convene health care stakeholders to foster collaboration across communities, states and regions.<sup>34</sup>

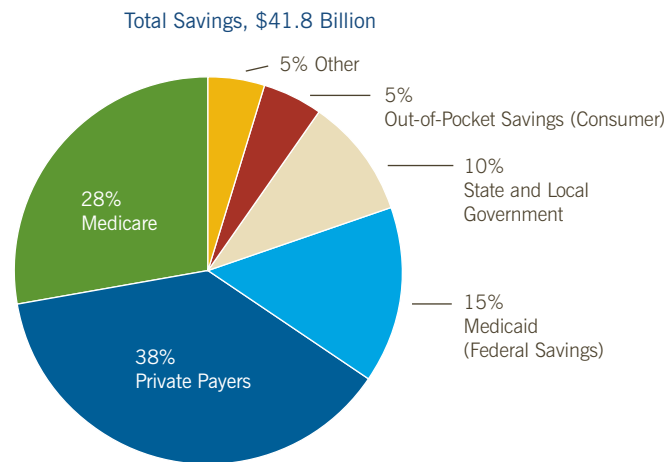
Many private-sector organizations also are advocating for greater health IT adoption by both providers and consumers, citing the value of personal

health records in care delivery. Insurers such as Aetna and UnitedHealth, as well as employers and their coalitions led by companies such as Verizon and IBM,

have recognized the integral role of the patient in his or her own health care by creating personal health records for their subscribers or employees.<sup>35</sup>

### Widespread use of electronic health record systems can realize significant savings for a variety of stakeholders.

Chart 12: Estimated Average Annual Savings from Widespread Use of Electronic Medical Record Systems\* by Recipient of Savings



\* The authors' analysis focuses on electronic medical record systems, defined to include electronic medical record, clinical decision support, a central data repository, and computerized physician order-entry. Please note this differs from the electronic health record definition in the text, defined by AHA as "systems that integrate electronically originated and maintained patient-level clinical health information, derived from multiple sources into one point of access." Totals do not sum due to rounding.

Source: Girosi, E., et al. (2005). *Extrapolating Evidence of Health Information Technology Savings and Costs*. Santa Monica, CA: RAND Corporation.

## WHAT WILL WE GAIN FROM ADOPTING HEALTH IT?

The widespread adoption of health IT and availability of electronic health information offer many benefits to both patients and to the health care system as a whole. Overall, patients and the health care system would gain:

- More appropriate health care;
- Improved coordination of care for patients with chronic illness;
- Easier movement of patients through the health care system;
- Streamlined processes of care;
- Shortened patient stays in hospitals;<sup>36</sup>
- Decreased paperwork for clinicians;<sup>37</sup>
- Projected hospital savings between \$17 and \$29 billion from averted preventable medical errors;<sup>38</sup>
- Reduced health care costs and insurance premiums for employers;
- Savings of approximately \$18 billion in federal health care spending<sup>39</sup>; and
- An estimated \$77 billion in savings to the health care system from improved efficiency.<sup>40</sup>

## ENDNOTES

- 1 Institute of Medicine. (July 2006). *Preventing Medication Errors*. Washington, DC.
- 2 Rand Health. (2005). *Health Information Technology: Can HIT Lower Costs and Improve Quality?* Santa Monica, CA.
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Health for Life is a framework developed by the American Hospital Association in collaboration with others to improve America's health and health care by calling for: a focus on wellness, the most efficient affordable care, the highest quality care, the best information and health care coverage for all paid for by all.

Health for Life – Fall 2007

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