

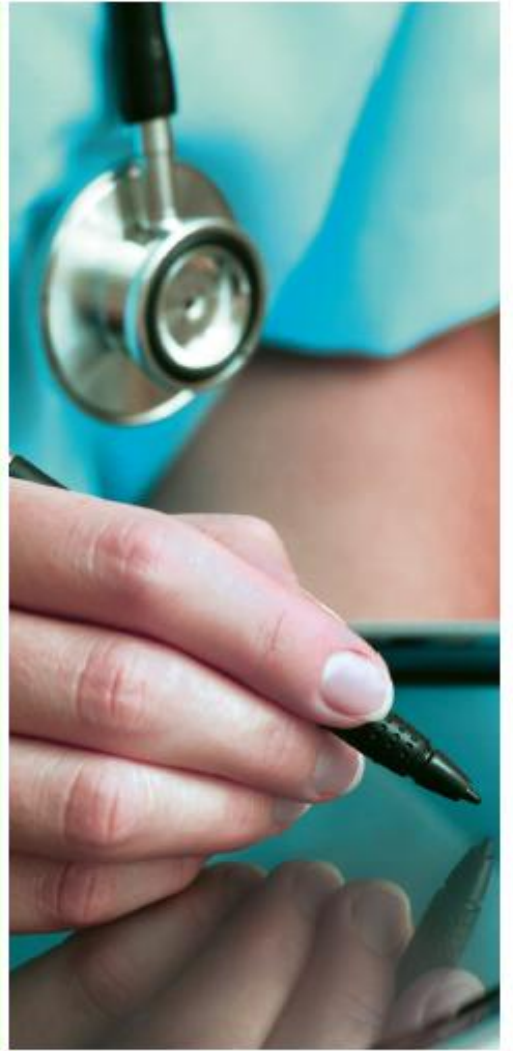


Health Project

The Role of Health IT in Supporting  
Health Care Transformation:

# Building a Strong Foundation

for America's Health Care System



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BIPARTISAN POLICY CENTER

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*This report is part of the Bipartisan Policy Center's Health Information Technology (IT) Initiative. The Health IT Initiative is exploring the effective use of health IT to (1) simplify and help ameliorate complex health system problems, (2) support the need for coordination of efforts at all levels, and (3) disseminate best practice strategies. The purpose of this report is to frame and encourage a conversation about the state of – and need for – effective implementation and utilization of health IT to support delivery system, payment and insurance reforms in the United States.*

## **EXECUTIVE SUMMARY**

Policymakers and health industry stakeholders across the political spectrum understand the imperative of using health information technology (IT) to ensure more affordable, accountable and higher quality health care in the United States. This bipartisan consensus embraces the strong belief that health IT is a – if not the – most important infrastructure component to address the primary challenges confronting the American health care system– rising costs, eroding coverage, and inconsistent quality. Coaxing the system into the “information age” will be critical to making long overdue progress on all of these fronts.

Health reforms designed to address our nation's most pressing health care issues can be enhanced considerably by the effective use of health IT:

- **Delivery System and Payment Reforms.** Poor communication and data sharing across multiple care settings leads to poor quality and wasteful, inefficient care. Delivery system reforms will spur innovation in the health care sector by encouraging more coordinated and accountable care, while payment reform will control rising health care costs by aligning reimbursement policy with medical outcomes and value. Neither of these reforms can be maximized or achieved in a timely manner without a more networked, IT-enabled health care system that works well in both rural and urban settings. Providing patients and all members of their care team with access to meaningful health care information, while effectively managing privacy and security, is a critical part of reforming the system.
- **Prevention and Wellness Initiatives.** Focusing on prevention and wellness is necessary to improve the public's health and address the fundamental health issues driving chronic disease. Health IT will enable greater access to health information, empower and encourage consumers to assume personal responsibility for their health, and help to meet prevention and wellness goals.
- **Insurance Market Reforms.** The implementation of insurance market reforms and the establishment of exchanges to secure access to coverage and provide choice of plans can be enhanced dramatically through the effective use of IT platforms and technology. Health IT can support these changes by enabling a streamlined point of access for consumer enrollment, eligibility determinations and the distribution of plan and general consumer information to support decision-making about insurance coverage options.

The Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 is the primary catalyst for the effective and widespread use of health IT to

support improvements in health and health care delivery. Resources from HITECH are helping to address many of the commonly cited barriers to health IT adoption, including the need for financing, implementation assistance, and assurance about the usability, interoperability and sustainability of health IT products. Assessing, analyzing, and ultimately overcoming these challenges must start with a significant understanding of the current landscape of health IT implementation activities, successes, and problems.

The Bipartisan Policy Center (BPC) report, *Building a Strong Foundation for America's Health Care System: The Role of Health Information Technology*, provides insight into the current landscape of health IT, explores the myriad of activities taking place to support better use of IT in health care, examines the role of health IT in health care transformation, and assesses progress made to date and the barriers to achieving successful implementation.

The report also outlines key recommendations to support effective leveraging of health IT to address health care system challenges:

- Improving coordination and alignment of health IT and reform efforts to identify opportunities for synergy, and develop shared solutions for common needs;
- Integrating lessons learned from early implementation efforts associated with large-scale programs to address unanticipated needs and issues;
- Enhancing strategies for engaging consumers in reform efforts through the use of health IT and emerging consumer technologies; and
- Increasing focus and public-private sector collaboration on two areas critical to achieving improvements in health and health care delivery through IT:
  - Expanding implementation assistance and workforce training to support the use of health IT, particularly for small physician practices and small hospitals and clinics that support rural and underserved populations.
  - Collaborating on the development and execution of a multi-faceted strategy for thoughtfully designed, privacy-protected health information exchange in the U.S.

To help accelerate progress on these and other critically important IT implementation issues, the BPC Health Information Technology Initiative is launching a Task Force on Delivery System Reform and Health IT. Led by BPC Health Project Co-Leaders and Former Senate Majority Leaders Tom Daschle and Bill Frist, and comprised of a range of nationally recognized and respected health system experts and leaders, the Task Force will identify ongoing efforts and best practices for encouraging coordinated, patient-centered, and accountable care. The Task Force will also make recommendations for aligning current health IT efforts to best utilize scarce public and private sector resources in support of new care delivery models that will improve the quality of care for all Americans.

## **ACKNOWLEDGMENTS**

*This report was written by Janet Marchibroda, Chair of the Bipartisan Policy Center Health Information Technology Initiative, with contributions from the BPC leaders and staff.*

## INTRODUCTION

The ubiquitous access to once-unimaginable flows of information defines our age, and the everyday lives of millions of Americans, both in the workplace and at home. Yet, our health care system, which otherwise thrives on advanced technologies bordering on the miraculous, has been paradoxically immune to the informational and networking revolutions transforming so much of American life. Policymakers at both ends of the political spectrum and stakeholders at all levels understand the importance of health IT to the future of health care in the United States. There is general bipartisan consensus that effective utilization of health IT is the foundation of a modern and sustainable health care system.

Rising costs, eroding coverage, and inconsistent quality are the primary challenges facing the American health care system. Health care costs are rising at an out-of-control rate, consuming a staggering 17 percent of the nation's Gross Domestic Product (GDP).<sup>1</sup> Despite the U.S. spending more per capita on health care than other developed countries,<sup>2</sup> the American health care system is often inconsistent or inadequate in terms of quality, safety, and cost-effectiveness. Studies show that only about half of all American adults receive recommended care.<sup>3</sup> Though chronic disease can often be managed or prevented through effective preventive health care, it accounts for approximately 70 percent of deaths and over 75 percent of health care spending annually in the United States.<sup>4</sup> Approximately 50.7 million Americans are uninsured, and many face serious barriers to accessing and paying for care.<sup>5</sup>

A number of efforts focused on addressing these health system challenges are now underway, fueled in part by the Patient Protection and Affordable Care Act (PPACA),<sup>6</sup> along with other federal and state reform efforts, including those related to delivery system and payment reforms, prevention and wellness, and insurance reform. Coaxing the system into the "information age" will help on all of these fronts. Without strategic and effectively implemented health IT, however, the lack of the information foundation that is required to take the necessary leaps forward will hamper such efforts. There is no panacea for our broken health system, but the wise implementation of health IT will provide the infrastructure required to make health system transformation a reality.

The Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 has been the primary catalyst for effective and widespread use of health IT.<sup>7</sup> HITECH is stimulating significant activity and investment in support of improvements to health and health care by addressing many of the commonly cited barriers to health IT adoption. To achieve the widely shared goal of an IT-enabled health care system, however, much more work remains to be done.

We are making substantial progress in modernizing our health care system, but many challenges to maximizing the potential of health IT remain. Assessing, analyzing, and ultimately overcoming these challenges must start with a significant understanding of the current landscape of health IT implementation activities, successes, and problems. To this end, this paper includes the following:

- 1) An examination of the role of health IT in health care sector transformation;
- 2) An assessment of the progress made to date and the barriers to achieving the successful implementation of health IT; and

3) An overview of recommendations needed to address some of the key challenges.

As this report will indicate, progress in effectively leveraging health IT to address current health care challenges will require more coordination and alignment of efforts, integration of lessons learned from early implementation efforts, more effective methods for engaging consumers, and addressing some of the barriers to health IT implementation through more public-private sector collaboration.

To address these issues, in addition to this report, the Bipartisan Policy Center Health Information Technology Initiative is launching a Task Force on Delivery System Reform and Health IT. Led by BPC Health Project Co-Leaders and Former Senate Majority Leaders Tom Daschle and Bill Frist, and comprised of a range of health system experts and leaders, the Task Force will identify ongoing efforts and best practices for encouraging coordinated, patient-centered, and accountable care. The Task Force will also make recommendations for aligning current health IT efforts to best utilize scarce public and private sector resources in support of new care delivery models that will improve the quality of care for all Americans.

## **THE ROLE OF HEALTH INFORMATION TECHNOLOGY IN HEALTH CARE SYSTEM TRANSFORMATION**

While not an end unto itself, health IT plays a critical and foundational role in supporting the delivery system, payment, prevention, and insurance reforms that are essential to creating a sustainable future for our health care system. This section of the paper explores the potential role of health IT in each of these areas.

### **The Role of Health IT in Delivery System and Payment Reform**

Payment reforms and delivery system innovations will change the way we care for patients in the United States. Instead of care that is fragmented, uncoordinated, and wasteful, new models of care will reorganize care around the patient. Care teams will get support from information that enables improvement, and incentives that promote accountability and reward outcomes in quality and efficiency.

#### *Government Efforts*

Federal and state government agencies as well as the private sector have been experimenting with new care delivery and payment models over the last several years. More recently, the focus has been on accountable care organizations (ACOs) and the patient-centered medical home, as well as a wide range of payment models that can support these new accountable, coordinated models of care. Payment models include bonuses applied to the traditional fee-for-service payment system, shared savings programs, bundled payments, and partial and comprehensive capitation.

The newly created Center for Medicare and Medicaid Innovation (CMMI) within the Centers for Medicare and Medicaid Services (CMS) will expand this activity by testing and evaluating new models of care delivery and payment through pilots and

demonstrations.<sup>8</sup> The first significant milestone of the CMMI was CMS' recent release of a proposed rule on a Medicare Shared Savings Program for ACOs.<sup>9</sup>

The Office of the National Coordinator for Health Information Technology's (ONC's) Beacon Communities Program is supporting 17 communities by strengthening their health IT infrastructure and exchange capabilities to improve care coordination, increase the quality of care, and slow the growth of health care spending.<sup>10</sup> Lessons learned from this program can provide timely insights into the role of health IT in supporting delivery and payment reforms.

States have considerable experience working with new delivery system models. At least seven states have either piloted or operationalized a patient-centered medical home model.<sup>11</sup> One example is the Vermont *Blueprint for Health* which is piloting the medical home model in three sites, serving 60,000 people, or about 10 percent of Vermont's population.<sup>12</sup> Another example is Colorado's medical home initiative for all children enrolled in Medicaid and the Children's Health Insurance Program.<sup>13</sup>

### *Private Sector Efforts*

While the public sector works on new models, several health care and community-based organizations are also moving forward with models of accountable care delivery, often with the support of incentives that commercial payers provide.

Intermountain Healthcare, an integrated delivery system based in Utah and Idaho, is making significant improvements in clinical quality. Intermountain lowered the cost of care delivery by developing the ability to measure, understand and feed back to clinicians and clinical leadership detailed clinical variation and outcomes data. Intermountain has an administrative infrastructure that uses robust clinical information to oversee the performance of care delivery and drive positive change.<sup>14</sup> Robust information systems help to make this approach possible.

Through the *Quality Health First Program*, Indiana Health Information Exchange is helping more than 1,700 physicians who serve more than 1.1 million patients in over 50 communities in Indiana, identify, prevent and manage diabetes, heart disease, breast cancer and asthma through innovations enabled by health IT. Easy-to-read patient summaries populated by electronic clinical information from more than 70 hospitals and other providers, pharmacy data and claims information from participating payers, including Medicare, Medicaid, Anthem Blue Cross Blue Shield, United Healthcare and Unified Group Services, are provided by the Quality Health First Program to participating physicians – allowing them to make the best care decisions possible.<sup>15</sup>

Private sector health plans have a long history of experimenting with new models of care, including the patient-centered medical home and initiatives that promote accountability and care coordination.

The Group Health Cooperative, a non-profit, consumer-governed health care organization serving 580,000 members in Washington State and Idaho, piloted the medical home model of primary care delivery and expanded this model to all

26 medical centers based on its results. Results after two years showed improvements in patients' experiences, quality and clinician burnout. Patients had 29 percent fewer emergency visits and six percent fewer hospitalizations, resulting in a net savings of \$10.30 per patient per month.<sup>16</sup>

Blue Cross Blue Shield companies have launched 45 demonstrations in 31 markets across the country that explore effective means of provider reimbursement and integrate quality improvement, care management and patient educational tools into primary care practices.<sup>17</sup>

According to a recent report from America's Health Insurance Plans, health plans are participating in more than 46 patient-centered medical home initiatives, 26 accountable care initiatives, 16 bundled payment initiatives, 19 value-based purchasing initiatives and four comprehensive/global payment initiatives.<sup>18</sup>

### *Where Health IT Makes an Impact on Delivery System and Payment Reform*

Any entity that coordinates care and promotes accountability among a group of providers for a given patient population will require various capabilities that will be difficult to achieve without the use of health IT. Health IT has the potential to play a considerable role in enhancing the following capabilities that are critical to accountable, coordinated care:

- Access to important patient information, including care plan, medication history, diagnostic test orders and results, allergies, and other key information, by all members of the care team, across care settings
- Reminders to support preventive care, including screenings and immunizations,
- Reminders and clinical messages to support follow-up on test results, medication adherence, and other key activities important to managing chronic care
- Decision support tools to support evidence-based clinical decisions
- Tracking referrals to support follow-up and consideration of consultative results
- Virtual and asynchronous communications among members of the care team and with the patient
- Creating registries to monitor and identify gaps in care
- Populating performance measures, using a combination of claims and electronic clinical data to provide information to those providing incentives and to support providers with quality improvement efforts
- Supporting provider communication with patients, including the ability to download personal health information and test results, as well as helpful educational information and health assessment tools designed to support patient knowledge and participation in decision making
- Remote patient monitoring to support adherence to care plans and promote early intervention
- Workflow management tools to support coordination among members of the care team
- Identifying high risk patients in need of intervention
- Assessing financial and clinical health risk
- Developing cost and utilization reports and distributing funds based on payment model



### *Effect on Delivery System and Payment Reform*

There are several issues at the intersection of health IT and both delivery system and payment reforms that must be considered as policies and programs move forward. The following is a summary of the types of issues that may need to be explored:

- What capabilities are needed for new models of care delivery and payment that may be addressed through health IT?
- Will the Stage 2 and Stage 3 requirements for the meaningful use of health IT under the Medicare and Medicaid EHR Incentive Programs under consideration successfully lay the foundation for what is needed for accountable and coordinated care?
- How are the performance measurement programs under various federal programs, including those related to both the Medicare and Medicaid EHR Incentive Programs and various delivery and payment innovation efforts aligned? How do the requirements of such programs align with those led by commercial payers as well as accrediting bodies? Are there opportunities to move toward some level of baseline consistency to reduce the burden and cost of multiple reporting requirements for multiple efforts?
- How can investments in Medicaid IT infrastructure be leveraged to support new models of care?
- How can both the clinical and administrative data sets required for a more complete picture of patient care—that currently reside across multiple settings and within multiple organizations—be effectively accessed while promoting privacy and security?

There is much to be learned from the multiple pilots and operational efforts associated with innovative new models of care and health IT. Private sector and state leaders with significant experience driving delivery system and payment reform efforts can share lessons learned and promising strategies to inform future policies and programs. In addition, the field will benefit considerably from learning about the challenges faced and the effectiveness of strategies employed by government-funded pilots supported by both CMS and ONC.

### **The Role of Health Information Technology in Prevention and Wellness**

Encouraging patients and consumers to take personal responsibility for their health is also a key part of transforming the health care system. The health system must engage consumers, families, and communities and empower them with information to promote prevention and wellness. Promoting healthy communities through prevention and wellness will reduce the costly burden of chronic disease.

#### *Government*

The federal government has long been involved in prevention and wellness initiatives and the PPACA includes numerous provisions to expand these activities, including:

- Creating a National Prevention, Health Promotion, and Public Health Council;
- Developing a national strategy to improve national health;
- Providing grants for employee wellness programs;

- Increasing access to preventive care for Medicare beneficiaries; and
- Implementing incentive programs to encourage healthy behaviors in Medicaid beneficiaries.

### *Private Sector*

The private sector also invests in prevention and wellness-related activities, due to their impact on quality, costs, and employee productivity. Such programs, sponsored by employers and health plans alike, include those related to prenatal care, obesity, smoking cessation, and preventive services. Examples include:

The IBM Corporation's *Children's Health Rebate Program*, which promotes healthy weight behavior in children through family activity, giving parents incentives to promote behavior changes and family activities in food management, physical activity, and personal screen time, with positive results.<sup>19</sup>

Blue Cross and Blue Shield of Mississippi Foundation's *Project Fit America Program*, which enabled 129 schools in Mississippi to receive exercise equipment. As a result of this program, some schools reported as much as a 159 percent increase in students' cardiovascular fitness and a 92 percent increase in upper body strength.<sup>20</sup>

### *Consumers*

Prevention and wellness activities generally rely heavily on engaging, educating and activating consumers. Introducing new social media technologies, personal health records, and other consumer-focused applications, combined with the significant increase in the number of Americans going online, bring about opportunities for significant innovation in prevention and wellness. Emerging technologies will likely transform the way that consumers access and interact with health information. According to the Pew Internet and American Life Project, 80 percent of internet users or 59 percent of all adults have looked online for information about health.<sup>21</sup> Sixty two percent of adult internet users or 46 percent of all adults use social network sites—and 15 percent of social network site users have received health information from these sites.<sup>22</sup> Twenty seven percent of internet users or 20 percent of adults have tracked their weight, diet, exercise routine, or some other health indicators or symptoms online.<sup>23</sup>

While there is significant interest by consumers in getting their health information online, they tend to trust their doctors most when it comes to obtaining health information.<sup>24</sup> Despite consumer interest, very little progress has been made in leveraging IT to support patient-physician communications. Although nearly half of doctors would prefer to use computer-based means as their predominant information channels with patients, only a small percentage (five percent) do so today.<sup>25</sup>

Building a bridge between consumer-focused applications and EHRs offers an opportunity to promote provider-patient communication. HITECH offers new expanded opportunities to link these two types of systems which in the past have operated in silos. Providing incentives that enable consumer access to health information that resides in the EHR is a significant change that can promote consumer engagement in

their health and health care. According to a recent survey conducted by the Markle Foundation, 70 percent of patients agree that patients should be able to download and keep copies of their personal health information, and a similar proportion (65 percent) of doctors agree.<sup>26</sup>

### *How Health IT Impacts Prevention and Wellness*

Many of the capabilities often needed for prevention and wellness activities can be addressed through health IT, including:

- Providing general and customized educational resources to support consumer awareness and engagement in prevention and wellness activities
- Providing online assessments, journals, and tracking tools to support healthy behaviors such as diet and exercise, chronic care management and prevention-related activities for consumers
- Enabling reminders and alerts for preventive screenings for both consumers and providers
- Providing import and export capabilities for EHRs and personal health records to support secure sharing of information between clinicians and patients

To consider how emerging health IT and social media capabilities can be integrated into ongoing prevention and wellness activities, a number of issues can be explored:

- How will Stage 2 and Stage 3 meaningful use incentives under the Medicare and Medicaid EHR Incentive Programs encourage providers to support consumer activation and engagement?
- What strategies, technical capabilities, and policies are needed to support the exchange of information between EHRs and consumer applications?
- How can rapidly emerging consumer applications help to address some of the gaps in health information exchange in the U.S.?
- Are any new information policies needed to address new patient-centered care delivery models?

Easier access to more information—made more possible with the support of health IT—will empower and encourage consumers to assume personal responsibility for their health and to help meet these prevention and wellness goals.

### **The Role of Health Information Technology in Health Insurance Market Reforms**

Over 16 percent of Americans—50.7 million individuals—are uninsured.<sup>27</sup> The PPACA includes several provisions designed to promote the expansion of coverage and reduce the number of uninsured, including:

- An individual requirement to purchase insurance;
- Expanding the Medicaid program to all Americans up to 133 percent of the federal poverty level;
- Setting new federal minimum standards for consumer protections to prevent coverage denials and promote access;
- Establishing new requirements for employers; and

- Creating state-based health insurance exchanges

Exchanges are new marketplaces where individuals and small groups will be able purchase insurance coverage. Under PPACA, each state, or group of states, will be responsible for designing and administering an exchange in compliance with minimum federal standards for health plan benefits and value.

### *Health IT for Health Insurance Exchanges*

Health insurance exchanges have several capabilities that can be addressed through IT including the following:

- Educating consumers on new health insurance reforms
- Streamlining points of access for enrollment and eligibility determination
- Providing information to inform consumer decision-making on insurance coverage options
- Addressing small business tax credits and individual/employer shared responsibilities
- Providing simplified, public online access to health care programs through a streamlined consumer-centric “one-stop” interface

In February 2011, HHS announced the award of “Early Innovator” grants to seven states that should help them design and implement the IT infrastructure needed to operate health insurance exchanges.<sup>28</sup> Each awardee is committed to developing technology that is reusable and transferable, with the goal of accelerating implementation efforts within states across the country.

Numerous key issues need to be addressed where health IT and health insurance reform (including health insurance exchanges) meet. A subset of potential issues is outlined below:

- As states move forward with the multiple requirements from the federal government that cut across multiple programs including those related to HITECH, PPACA, and CHIPRA, how can common requirements (e.g. consumer portals, enrollment and eligibility processes, data repositories, identity management, etc.) be addressed through a single solution that can support multiple programs?
- Are there additional opportunities to build scalable and transferable models to accelerate implementation and reduce cost and labor requirements across states?
- How can states leverage new social media capabilities to reach out to those who take advantage of their programs and services?

## **ASSESSING HEALTH IT PROGRESS**

Policymakers, providers, health care purchasers, payers and consumers all recognize the value of health IT to address many of the challenges of the health care system. The question is not whether to adopt health IT, but rather how its effective implementation can be assured in a way that supports improvements in the quality, safety, and efficiency of health care.

HITECH invests nearly \$30 billion in a nationwide health IT effort, the goal of which is to improve the quality, safety and efficiency of care. Embarking on a journey as complicated and on such a large scale as this is unprecedented and will require both tenacity and flexibility. Continuing to assess progress and making any needed mid-course corrections is imperative for the long-term success of the health IT effort.

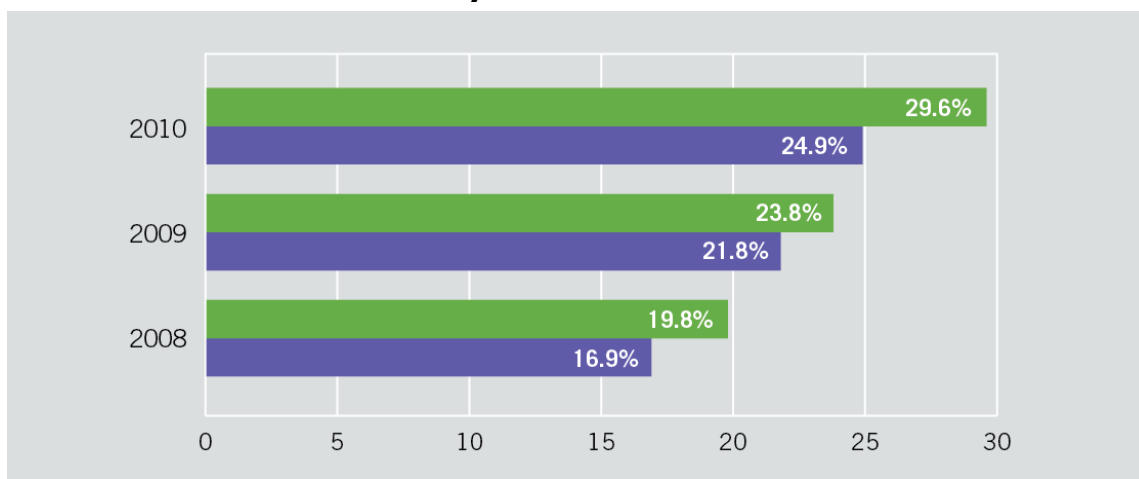
This section will assess progress by addressing the following two questions:

- 1. Are the overarching goals related to the health IT effort being achieved?**
- 2. What is the status of implementation?**

In this section, we will address both questions, beginning with the first—are the overarching goals of the health IT effort being achieved? There are two primary components to this question: the first, whether levels of adoption have increased and the second—and more important component—whether nationwide adoption efforts are driving improvements in health and health care delivery. Addressing the first component—are clinicians, hospitals, and other providers actually adopting EHRs? We look to the following oft-cited sources to measure this goal: (1) the Center for Disease Control and Prevention’s National Center for Health Statistics National Ambulatory Medical Care Survey and (2) the American Hospital Association’s Survey of Information Technology Adoption.

According to the most recent results from the Center for Disease Control and Prevention’s National Center for Health Statistics National Ambulatory Medical Care Survey, 24.9 percent of office-based physicians have adopted at least a “basic” EHR.<sup>29</sup> Growth in EHR adoption was strongest among primary care physicians last year, where 29.6 percent have now adopted at least a basic EHR.<sup>30</sup> This represents growth of 24 percent from 2009 to 2010 and nearly 50 percent growth since 2008.

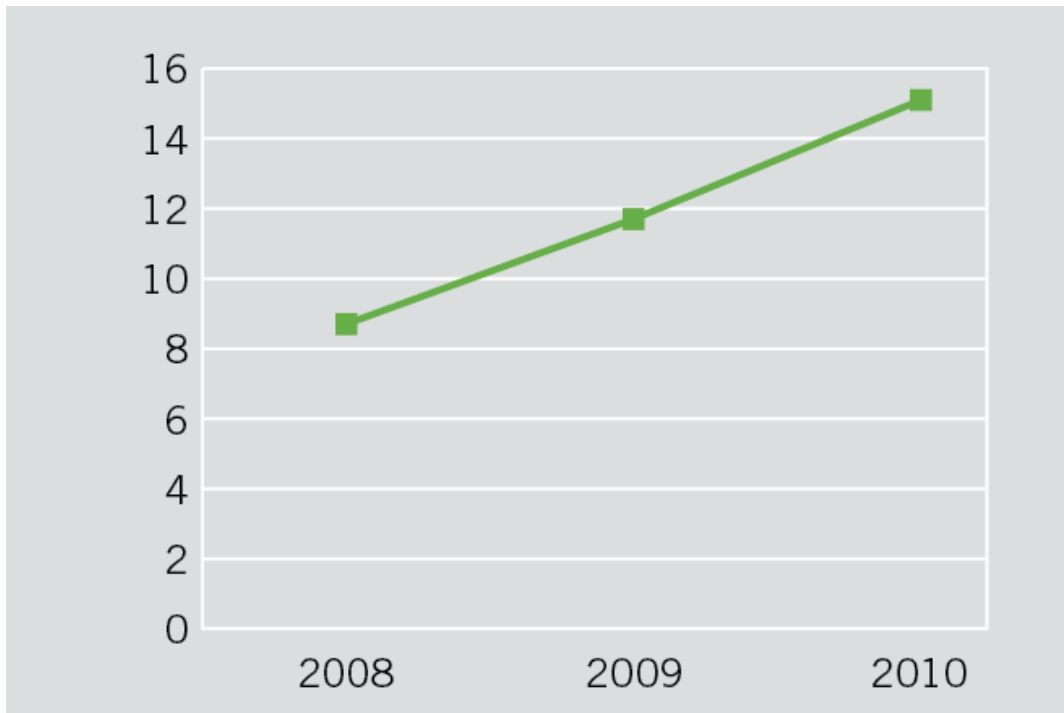
**Figure 1: Percentage of Office-Based Physicians With “Basic” Electronic Health Record System**



**Source:** CDC/NCHS. National Center for Health Statistics National Ambulatory Medical Care Survey. 2008-2010.

According to the most recent results of the American Hospital Association’s Survey of Information Technology Adoption, 15.1 percent of acute care non-federal hospitals have adopted at least a “basic” EHR. This represents a 29 percent increase from the 11.7 percent level of adoption in 2009.<sup>31</sup>

**Figure 2: Percentage of Acute Care Non-Federal Hospitals With at Least a “Basic” Electronic Health Record**



**Source:** CDC/NCHS. National Ambulatory Medical Care Survey. December 2010.

Current health IT adoption rates—among both physicians and hospitals—is growing but continues to be low. In fact, as 2010 data for hospitals and physicians show, adoption rates indeed are climbing. The current adoption rate is fairly predictable, given the barriers described above and the fact that so many of the programs designed to support adoption have just recently gone into effect. One of the most critical measures of success for the nationwide health IT effort will be the level of adoption in future years—particularly in 2012 and beyond, after the numerous programs designed to address key barriers are fully operationalized.

#### *Status of Implementation*

The second component of assessing whether the goals of the health IT effort have been achieved is the most important and probably one of the hardest to measure. It addresses whether health IT investments, and particularly those aligned with meaningful use requirements, have resulted in higher quality, safer, more efficient care. Evidence from numerous previous studies indicates that health IT does indeed improve care. A March 2011 study comprised of a literature review on health IT’s effects on quality, efficiency, and provider satisfaction outcomes found that 92 percent of the

recent articles on health IT reached conclusions that were positive overall.<sup>32</sup> The analysis indicated positive overall results on areas such as efficiency of care, effectiveness of care, provider satisfaction, patient safety, patient satisfaction, and care process, with limited negative results.

Data emerging from studies and evaluation efforts now underway will help answer the question as to whether going beyond general health IT adoption to meaningful use will also result in improvements in quality, safety, and efficiency. Experts, policy makers, and health care leaders across the country agree—as evidenced by the significant public and private investments in health going on today—that meaningful use will likely result in improvements in quality, safety and efficiency of health care.

The second question to address is that related to the status of implementation efforts. The answer lies in four areas:

- Consider the implementation effort itself—the rationale as it relates to primary barriers and its key components
- Explore what the government—through HITECH—and the private sector is doing to support the implementation effort
- Assess progress of implementation efforts through a set of process measures
- Highlight areas that will likely warrant some additional focus

### **Barriers to the Use of Health IT**

The benefits of health IT are well established, and awareness of its important role in supporting various delivery system, payment, and insurance reforms is growing. They include:

- Lack of financing and lack of a sustainable business model for health IT;
- Challenges with making the transition to e-enabled health care delivery—particularly within small physician practices and small community hospitals;
- Concerns about usability, interoperability, and sustainability of systems;
- Lack of support for health information exchange—which is necessary to achieve some of the clinical and efficiency benefits of health IT systems; and
- Continuing concerns about privacy and security.

According to a recent study of EHRs in ambulatory care, among physicians who did not have access to an electronic health record system, the most commonly cited barriers were capital costs (66 percent); not finding a system that meets their needs (54 percent); uncertainty about their return on investment (50 percent); concern that the system would become obsolete (44 percent); and capacity to select, contractor for, install and implement an EHR system (39 percent).<sup>33</sup>

### **The Role of HITECH in Addressing Health IT Barriers**

The HITECH Act was designed to address many of the barriers outlined above. For example:

- Providing a set of financial incentives for the meaningful use of EHRs;

- Providing initial funding for technical assistance to priority providers through the regional extension center program;
- Supporting workforce development efforts to expand the number of skilled workers who can support the transition;
- Launching processes designed to gain agreement on and drive the adoption of standards for baseline functionality and interoperability;
- Providing early funding support to facilitate health information exchange; and
- Expanding rules and enforcement related to privacy and security.

<b>Barrier</b>	<b>HITECH Program</b>
<b>Financing</b>	Medicare and Medicaid EHR Incentive Program
<b>Need for Standards</b>	Adoption of Standards
	Certification Programs
<b>Implementation Challenges</b>	Regional Extension Center Program
	Workforce Development Programs
<b>Health Information Exchange</b>	State Health Information Exchange Program
	Nationwide Health Information Network Work
<b>Concerns About Privacy</b>	New Privacy Policies

In the little more than two years since HITECH was signed into law, HHS and the private sector have implemented numerous programs to support the meaningful use of health IT. Despite the significant amount of focus and investment, various challenges continue to exist, which must be addressed—by both the public sector and the private sector—to realize the full potential of health IT.

As the HITECH program moves from the policy and program development phase into the execution phase, inevitably issues will continue to arise which may require adjustments in policy, strategy and approach. Striking the right balance between the need to move quickly and getting it right will be critical. Continued dialogue and healthy tension around these issues will support the development of a common path forward that recognizes the current state of the health system, but which also continues to pull the system forward towards improvements that are necessary to improve the quality, safety and efficiency of health care for patients.

### **Addressing Financing Challenges**

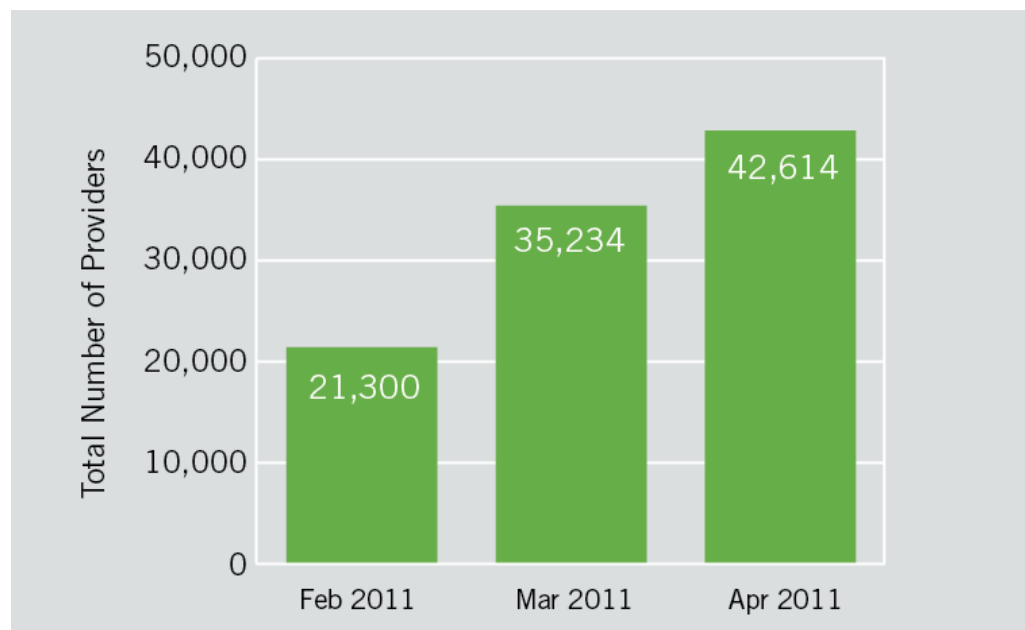
The Medicare and Medicaid EHR Incentive Programs, fueled by up to a \$27 billion commitment from HITECH, were catalytic in focusing attention on the importance of health IT. These programs provide incentives in the form on bonuses—followed by penalties—to eligible professionals and hospitals that demonstrate the meaningful use of certified EHR technology. Eligible Medicare professionals can receive up to \$44,000 over five years, and eligible Medicaid professionals can receive up to \$63,750 over six



years. Eligible hospitals can each qualify for a \$2 million base payment and additional funds based on several other factors.<sup>34</sup>

As of April 30, 2011, 42,614 providers had active registrations for incentives in the system. More than \$83 million in payments were made to eligible professionals and hospitals participating in the Medicaid EHR Incentive Program since January 2011.<sup>35</sup> The first Medicare EHR incentive payments were distributed the week of May 19, 2011.<sup>36</sup>

**Figure 3: Total Registration for Medicare and Medicaid EHR Incentive Programs**



**Source:** Centers for Medicare and Medicaid Services, accessed May 18, 2011.

While the federal government's investment in health IT provides an important foundation for meaningful EHR adoption, private sector cooperation and alignment will be necessary to accelerate the adoption of health IT across the U.S.

Several plans including Aetna, Highmark, Humana, United Healthcare, and WellPoint have publicly shared their strategies for supporting health IT adoption among providers through their various performance and incentive programs.<sup>37</sup> Wellpoint, for example, in August 2010, announced its plans for aligning its health IT pay-for-performance incentive program with the federal meaningful use standards and a financing program designed to stimulate IT adoption in hospitals located in underserved and rural communities.<sup>38</sup>

Current incentive programs can help pave the way for early adoption of health IT by offsetting some of the direct and indirect costs of implementation. Because the current payment system predominantly rewards volume of care instead of value, there is no sustainable business case for using information and IT to promote more coordinated, accountable care.

## **Need for Standards and Assurance**

Until the passage of the HITECH Act, one of the most cited barriers to the adoption of health IT was the lack of standards for interoperability. Well-defined data and technical standards are the foundation for interoperability between systems—allowing for reliable, consistent, secure, and accurate health information exchange, which is necessary to realize the full value of health IT.

To address the need for standards and interoperability, the HITECH Act established two federal advisory committees to support recommendations to the Department of Health and Human Services (HHS) Secretary related to the standards, implementation specifications and certification criteria needed for the electronic exchange and use of electronic health information. The final rule on an initial set of standards, implementation specifications, and certification criteria was issued by ONC for adoption by the HHS Secretary in July 2010.

The HITECH Act also mandated the development of a voluntary certification program. The purpose of this program is to provide purchasers and users of EHR technology assurance that the technology and products would meet the standards and have the necessary functionality and security to help meet the meaningful use criteria associated with the Medicare and Medicaid EHR Incentive Programs. ONC released the Temporary Certification Program Final Rule in June 2010, establishing certification programs for purposes of testing and certifying EHR technology. In late August 2010, ONC announced the first set of testing and certification bodies authorized to begin testing and certifying EHR systems for compliance with the standards and certification criteria. As of this writing, there are six ONC-authorized certification and testing bodies that have certified 495 ambulatory EHR products and 253 inpatient EHR products.<sup>39</sup>

Feedback received through public testimony to health IT-related federal advisory committees indicate concerns regarding the clarity of rules and requirements associated with certification and their application to existing configurations already in place particularly within hospital systems. In addition, there are concerns about the short period of time between when rules, standards, specifications and certification criteria have been or are expected to be available and when they go into effect. It is expected that it will take a significant amount of time to build and test new requirements of EHR products, get them to market, and implement them within provider institutions.<sup>40</sup> HHS is aware of these issues which are currently under deliberation as the requirements for Stage 2 of the Medicare and Medicaid EHR Incentive Programs are being developed. Furthermore, one of the health IT-related federal advisory committees is now seeking comments and requesting feedback on the progress of the certification program. Comments are due back by June 17, 2011.

## **Addressing Challenges with Implementation**

One of the most difficult issues associated with health IT adoption—outside of financing—is the enormous process change that must occur within provider organizations to integrate the use of electronic systems in the care delivery process.

Large and small institutions struggle with the significant cultural and workflow change necessary to support the information-enabled care brought about the use of EHRs.

Many large institutions have large IT staffs and consultants that can assist with the change process. On the other hand, small community and rural hospitals, and small physician practices do not often have the same set of resources to support them with the difficult processes associated with implementation.

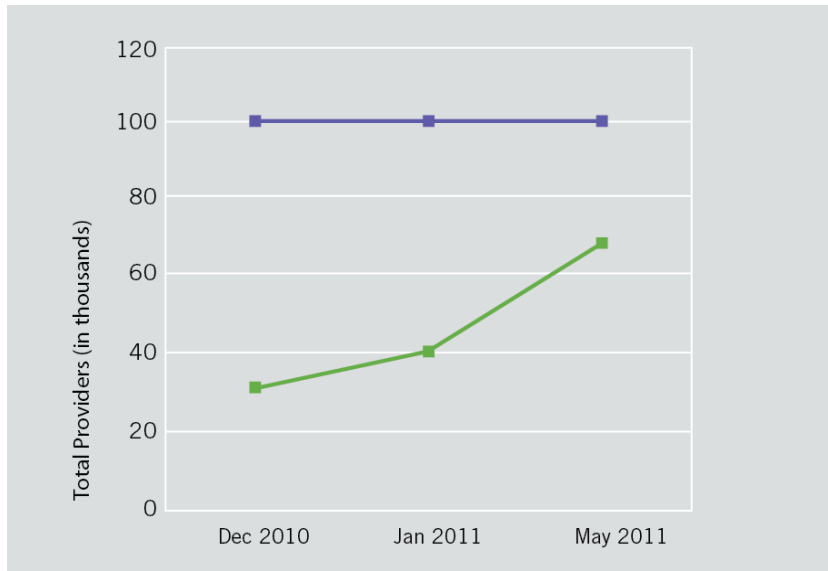
### *Regional Extension Centers*

To address this challenge of health IT implementation, HITECH called for the creation of regional extension centers (RECs) to support those providers that need it most. More than \$700 million in funding has been provided to 62 RECs to support priority providers, including:

- Individual and small group practices of 10 or fewer professionals
- Public Hospitals
- Critical Access Hospitals
- Community Health Centers
- Rural Health Clinics
- Other settings that predominantly serve uninsured, underinsured, and medically underserved populations

To date, RECs have registered more than 67,000 providers for technical assistance, reaching two-thirds of their goal to provide support services to at least 100,000 priority primary care providers within two years.

**Figure 4: Total Number of Providers Enrolled in Regional Extension Centers**



**Source:** *www.healthit.gov, accessed May 17, 2011.*

## *Physicians*

There are more than 660,000 practicing physicians in the U.S.<sup>41</sup> While government-funded programs will be extremely helpful in jump-starting implementation assistance, relying on such programs alone to address implementation needs will not be sufficient to move practicing physicians toward the meaningful use of health IT. To support physician practice awareness of health IT, several medical societies, such as the American College of Physicians, the American Academy of Family Physicians, and the American Academy of Pediatrics are working to help physicians assess their readiness, evaluate and select an EHR, and identify the steps needed to support implementation.

Some private sector organizations contemplated expanding their services to provide low-cost consulting models to support small physician practices. Due to the labor intensity and high cost associated with supporting small practices, combined with scarce financial resources on the part of small practices, challenges continue in this market. Promoting innovation and private sector entry into the market of helping small physician practices make the transition to EHRs will be needed to achieve the goals of the nationwide health IT effort.

## *Hospitals*

The 5,800 hospitals in this country will also need assistance moving forward. While many are well-funded, better staffed and have more resources in place to assist with the migration, many still struggle with what they perceive to be aggressive timelines, and the shortage of a trained workforce.<sup>42</sup> New, innovative strategies are being developed by non-profit groups and hospitals across the country to support implementation efforts. For example, the College of Health Information Management Executives launched the "StateNet" Program, through which seasoned, experienced hospital chief information officers are offering advice and limited support to other smaller hospitals in regions across the country.<sup>43</sup> Some health systems which own multiple small hospitals in communities across the country, such as Ascension Healthcare, implementing new initiatives designed to help their individual hospitals, providing readiness assessments and technical and implementation support. Consolidation and expansion of these activities is resulting in greater access to expert resources, greater efficiencies, and more effective feedback loops on lessons learned to benefit all participating organizations.<sup>44</sup>

## *Rural and Underserved Areas*

There are particular challenges associated with health IT adoption in rural and underserved areas. There are 3,846 rural health clinics<sup>45</sup> and 1,324 critical access hospitals<sup>46</sup> in the United States. Challenges associated with implementation of health IT within rural environments are multi-fold, including limited financial resources, limited availability of a skilled local workforce to support implementation requirements, and challenges with broadband access. To assist with addressing these challenges, approximately \$32 million in additional funding was provided to RECs to support critical access hospitals.

In addition to implementation assistance, HITECH enables the federal government investment in expanding the pool of trained health IT professionals to effectively

support the adoption of health IT. To accelerate workforce training efforts, ONC invested \$116 million in workforce development programs, including those related to curriculum development, competency examination development, community college programs and university based training programs.<sup>47</sup> ONC's community college program has enrolled approximately 5,400 students to date with the goal of training more than 10,500 skilled health IT specialists in six different roles by 2012.<sup>48</sup> ONC's university-based training program has already graduated more than 500 health IT specialists ready for employment.<sup>49</sup>

## **Health Information Exchange**

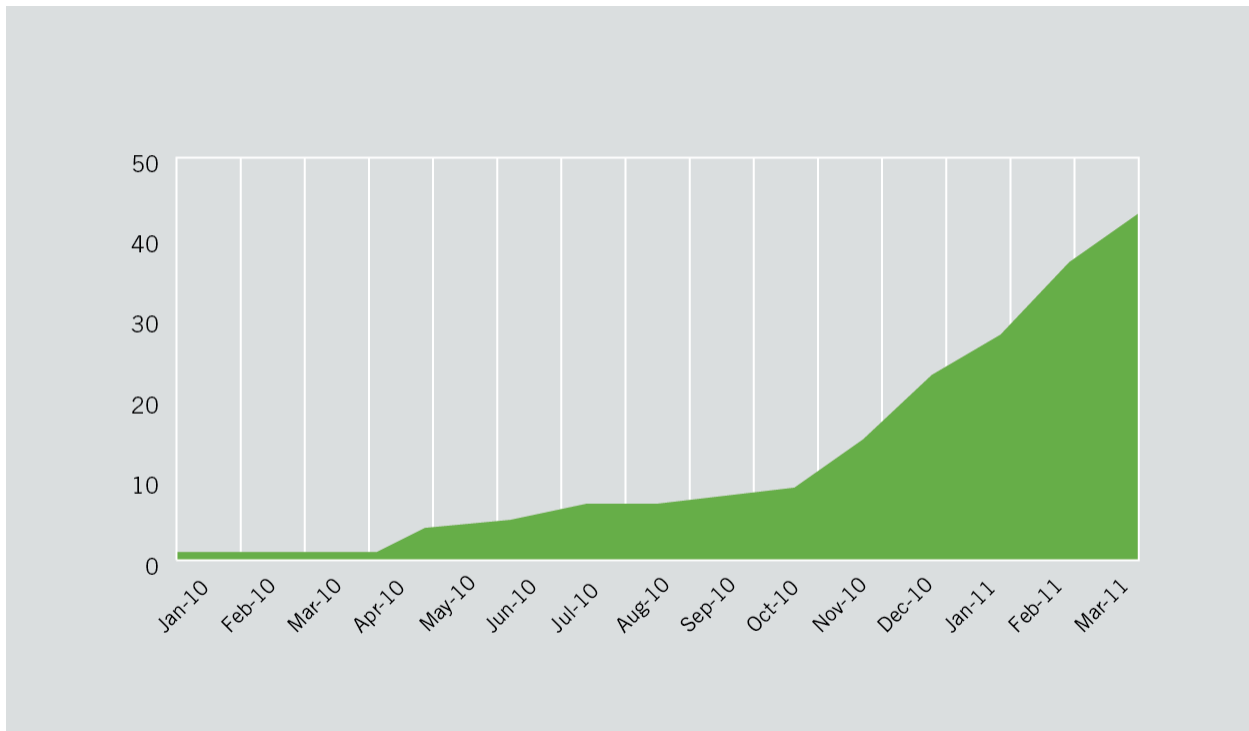
Health information exchange—or the sharing of data, such as laboratory results and medication history across disparate organizations—is necessary to achieve the true value of health IT and crucial to the success of delivery and payment reforms. Because the data needed to inform care delivery and improvements in population health resides in multiple settings, including primary care and specialty physician offices, hospitals, laboratories, pharmacies, health plans, and even in personal health records, getting to health information exchange has been one of the most difficult challenges of the nationwide health IT implementation effort. Key barriers to health information exchange include the lack of a business model for exchange, concerns about privacy and security, and some lack of clarity around the appropriate strategy for implementation. While HITECH has provided expanded policies related to privacy and additional enforcement, and established methods for agreement on and adoption of standards, challenges remain. Continuing to expand the level of exchange required by Medicare and Medicaid EHR Incentive Programs will help but continued movement towards coordinated and accountable care through delivery system and payment reforms will provide the most compelling business case for health information exchange efforts.

### *Government Efforts*

ONC's efforts around health information exchange have centered on the development of standards for interoperability, inclusion of health information exchange requirements in its recommendations regarding requirements for the Medicare and Medicaid EHR Incentive Programs, and funding to states to support health information efforts.

Through the implementation of HITECH, HHS provided more than \$550 million in funding to states and state designated entities across the U.S to support states in convening stakeholders, assessing current levels of exchange and facilitate the development and implementation of strategies to support exchange.<sup>50</sup> As part of funding agreements with HHS, states and state designated entities are required to develop strategic and operational plans associated with health information exchange. As of this writing, nearly all of the states have submitted their strategic and operational plans.<sup>51</sup>

**Figure 5: Number of State Health Information Exchange Operational Plans Approved**



**Source:** <http://statehierresources.org/state-plans>, accessed May 10, 2011.

### *Private Sector Efforts*

Private sector organizations are working on a wide range of approaches to address health information exchange needs. Non-profit community-based health information exchange organizations, states, EHR vendors, IT integrators, large health systems, health plans, organizations working in the pharmacy and laboratory arena, and organizations promoting a patient-directed approach are all offering a range of services to support the exchange of data. Many private sector organizations are also participating in the Direct Project—a government funded initiative designed to support health information exchange.<sup>52</sup>

Despite this level of activity, there remains a need for a strategy to achieve effective health information exchange. A shared vision of how the many efforts can work together in concert to promote widespread exchange is needed. Hampering these efforts is the fact that very little data exists on the level of exchange happening today. Some survey instruments attempt to capture the current status of health information exchange activity in the U.S., including federal requirements of state reporting through the ONC State Health Information Exchange program<sup>53</sup> and academic and non-profit surveys of exchange efforts hosted by state and community-based organizations. However, it is very difficult to measure the percentage of key health information currently being exchanged in the U.S., primarily due to the multiple parties and systems involved in exchange efforts.

A one-size-fits-all approach to health information exchange is likely not feasible or appropriate for the diverse U.S. health care system. A combination of efforts will likely spur more acceptance and forward movement in this challenging area. These efforts include:

- Clear and ongoing assessment and public dissemination of the level of exchange;
- Articulation of a common path forward (including the many alternatives available to support exchange-and a description of how federal, state and private sector efforts work together to support the overall strategy);
- Continued focus on privacy;
- Further clarity around the standards required for exchange; and
- Most importantly, incentives that promote the exchange of information.

## **Privacy and Security**

Research indicates that privacy and security are barriers to increasing the utilization and exchange of health care data. Federal agencies must have appropriate and enforceable means to protect the privacy and security of health information exchange for all Americans. Several additional policies and processes related to privacy and security were made pursuant to HITECH and HIPAA. These policies promote better enforcement of existing legal safeguards and broader consumer education about the benefits of health IT.

There are several federal agencies charged with protecting the privacy of health information, including ONC, which oversees the HITECH statute, and HHS' Office for Civil Rights (OCR), which enforces the Health Insurance Portability and Accountability Act of 1996 (HIPAA) Privacy Rule and the HIPAA Security Rule.<sup>54</sup> Pursuant to HITECH, several regulations have strengthened privacy and security protections, including the HITECH Act Enforcement Interim Final Rule, the Breach Notification Final Rule, and the expansion of the HIPAA privacy rule to enforcement against business associates of health plans, health care providers and health care clearinghouses. In addition to these rules, ONC appointed a Chief Privacy Officer to advise the National Coordinator on developing and implementing ONC's privacy and security programs.

The meaningful use of health IT hinges upon the trust of physicians and patients that the federal government has the power to enforce protections and penalties for violation and security breaches. According to a recent study by the Markle Foundation, approximately 80 percent of physicians and patients believe privacy protections are necessary to ensure the wise allocation of public investment in health IT. At the same time, at least 68 percent of the public and 75 percent of doctors are willing to allow "de-identified information" to be used for public interest.<sup>55</sup> Education about how private health information is kept protected and secure will help calm fears about intentional or accidental breaches.<sup>56</sup>

## **KEY IMPERATIVES FOR MOVING FORWARD**

We are at a time of unprecedented investment and focus on health system innovation in this country. The following next steps are based on the assessment of progress to date:

### **1. Improving Coordination and Alignment**

Multiple efforts focused on new delivery system models, payment reform, prevention, and health insurance reform, as well as the “meaningful use” of health IT are all moving together at a rapid pace. Given the timelines and significant amounts of work associated with each of these efforts, there is little opportunity to assure alignment and coordination among these programs. We will facilitate a dialogue on how to align multiple health IT programs and identify opportunities for synergy, reducing conflicting requirements, promoting efficiencies, and facilitating common solutions to shared needs.

In evaluating the impact of multiple, parallel efforts, it will be useful to view these efforts through the lens of providers, payers, patients, state governments, and the federal government.

### **2. Integrating Lessons Learned from Early Implementation Efforts**

As new, large scale programs—such as HITECH—are implemented, unanticipated issues inevitably arise which require adjustments in policy, strategy and approach. There is much to be learned from the early, on-the-ground experiences of health care stakeholders as they grapple with new requirements associated with health IT, as well as delivery system, payment, prevention and insurance reforms.

Expanding methods for gaining rapid feedback utilizing transparent methods will benefit both public and private sector leaders who are focused on the execution of health care programs, providing important information regarding unintended consequences, unanticipated or unmet needs for implementation assistance and support, and any other mid-course adjustments needed to continue to achieve desired goals.

### **3. Expanding Engagement of Consumers Through New Technologies**

The use of the internet and advanced technologies is predominant in American life, but the health care system has been slow to engage patients in using these new forms of technology. Health IT enables patients to actively participate in their own care, producing quality, safety and cost improvements.

To fully realize the benefits of reforms, we should act to:

- Gain a better and shared understanding of the benefits of and barriers to patient and consumer engagement in new models of care;



- Assess the role of health IT and emerging consumer-focused applications in increasing consumer engagement; and
- Develop and execute a range of strategies that can be utilized by public and private sector leaders to more fully engage consumers in wellness-related activities, and delivery system and payment reforms through the use of health IT.

#### **4. Addressing Gaps Through Expanded Public-Private Sector Collaboration**

Two areas in particular would benefit from public-private sector collaboration to assure that health IT investments are best supporting health system reforms:

- Expanding implementation assistance and workforce training to support the meaningful use of health IT—with a particular focus on small physician practices and small hospitals and clinics that serve rural and underserved populations; and
- Developing a vision and multi-faceted strategy for achieving more robust levels of health information exchange in the U.S.

### **CONCLUSION**

This is an unprecedented time in health care, with significant focus and resources devoted to making necessary changes in health care delivery, payment, and access. Health IT holds the promise of making health reforms and innovations more effective and, ultimately, more possible. Developing a broad strategy for the effective use of health IT is a time-sensitive imperative. The BPC will facilitate a conversation to align and coordinate health IT and health reform efforts and foster collaboration between the public and private sectors. We trust that engaging in this endeavor will help accomplish the ultimate goal of improving the quality, safety and efficiency and effectiveness of our health care system.

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<sup>1</sup> Centers for Medicare and Medicaid Services, *Table 1: National Health Expenditures and Selected Economic Indicators, Levels and Annual Percentage Change: Calendar Years 2004-2019 (September 2010)*, available at: <https://www.cms.gov/NationalHealthExpendData/downloads/NHEProjections2009to2019.pdf> (accessed May 26, 2011).

<sup>2</sup> K. Davis, C. Schoen, and K. Sremikis, "Mirror, Mirror On the Wall: How the Performance of the U.S. Health Care System Compares Internationally: 2010 Update" (Washington, DC: The Commonwealth Fund, 2010).

<sup>3</sup> McGlynn, E. A., S. M. Asch, et al., "The Quality of Health Care Delivered to Adults in the United States," *New England Journal of Medicine* 2008; 348(26): 2635-2645.

<sup>4</sup> Kaiser Family Foundation, *U.S. Health Care Costs*, March 2010, available at: <http://www.kaiseredu.org/Issue-Modules/US-Health-Care-Costs/Background-Brief.aspx> (accessed May 26, 2011).

<sup>5</sup> US Census Bureau, *Current Population Survey: Income, Poverty, and Health Insurance Coverage in the United States*, 2010.

<sup>6</sup> The Patient Protection and Affordable Care Act (Pub. L. 111-148, 124 Stat. 119) was signed into law by President Barack Obama on March 23, 2010. The Health Care and Education Reconciliation Act of 2010 (Pub. L. 111-152, 124 Stat. 1029) was enacted on March 30, 2010 to amend the Patient Protection and Affordable Care Act.

<sup>7</sup> The Health Information Technology for Economic and Clinical Health (HITECH) Act was created to stimulate the adoption and use of health IT in the United States. President Barack Obama signed HITECH into law on February 17, 2009 as part of the American Recovery and Reinvestment Act of 2009 (Pub. L. 111-5).

<sup>8</sup> The Center for Medicare and Medicaid Innovation (CMMI) was created by section 3021 of the Patient Protection and Affordable Care Act. CMS recently issued proposed rulemaking for ACOs which will be supported by a shared savings payment model. ACOs are broadly defined as a group of providers who are held accountable for the cost and quality of care for a defined patient population group through incentive payments or penalties.

<sup>9</sup> Medicare Program; Medicare Shared Savings Program: Accountable Care Organizations and Medicare Program: Waiver Designs in Connection With the Medicare Shared Savings Program and the Innovation Center; Proposed Rule and Notice; Proposed Rule and Notice. 76 Federal Register 67 (April 7, 2011), pp.19528-19654.

<sup>10</sup> Office of the National Coordinator for Health Information Technology. [http://healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_onc\\_beacon\\_community\\_program\\_improving\\_health\\_through\\_health\\_it/1805](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_onc_beacon_community_program_improving_health_through_health_it/1805) (accessed May 30, 2011)

<sup>11</sup> K. Purington, A. Gauthier, S. Patel and C. Miller, "On the Road to Better Value: State Roles in Promoting Accountable Care Organizations" (Washington, DC: The Commonwealth Fund, 2011).

<sup>12</sup> C. Bielaszka-DuVernay. "Innovation Profile: Vermont's Blueprint for Medical Homes, Community Health Teams, and Better Health at Lower Cost." *Health Affairs* 2011; (30)3: 383-386.

<sup>13</sup> <sup>13</sup> K. Purington, A. Gauthier, S. Patel and C. Miller, "On the Road to Better Value: State Roles in Promoting Accountable Care Organizations" (Washington, DC: The Commonwealth Fund, 2011).

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<sup>15</sup> Indiana Health Information Exchange. <http://www.ihie.org/Solutions/quality-health-first-program.php> (accessed May 30, 2011).

<sup>16</sup> R.J. Reid, K. Coleman, E.A. Johnson, P. A. Fishman, C.Hsu, M.P. Soman, C.E. Trescott, M. Erikson and E.B. Larson. "The Group Health Medical Home at Year Two: Cost Savings, Higher Patient Satisfaction, and Less Burnout for Providers," *Health Affairs* 2010; (29)5:835-843.

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- <sup>30</sup> Ibid.
- <sup>31</sup> A "basic" electronic health record in a physician office is capable of managing patient demographic information, patient problem lists, patient medication lists, clinical notes, orders for prescriptions, and view laboratory and imaging results. A "basic" electronic health record in a hospital is capable of managing patient demographic information, physicians' notes, nursing assessments, patient problem lists, patient medication lists, discharge summaries, lab and radiologic reports, diagnostic test results, and orders for medications. Definitions are from: Hsiao CJ, et al., National Center for Health Statistics, Centers for Disease Control, *Electronic Medical Record/Electronic Health Record Systems of Office-based Physicians: United States, 2009 and Preliminary 2010 State Estimates Health E Stats*, available at: [http://www.cdc.gov/nchs/data/hestat/emr\\_ehr\\_09/emr\\_ehr\\_09.pdf](http://www.cdc.gov/nchs/data/hestat/emr_ehr_09/emr_ehr_09.pdf) (accessed May 26, 2011); and, Jha AK, et al., "Use of Electronic Health Records in U.S. Hospitals" *The New England Journal of Medicine* 2009; 360:1628-1638.
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<sup>38</sup> Wellpoint, Inc., *WellPoint Supports Efforts to Adopt Health Information Technology*, 5 Aug. 2010, available at: <http://ir.wellpoint.com/phoenix.zhtml?c=130104&p=irol-newsArticle&ID=1457154&highlight=> (accessed May 24, 2011).

<sup>39</sup> Office of the National Coordinator for Health Information Technology. <http://onc-chpl.force.com/ehrcert> (accessed May 30, 2011)

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<sup>41</sup> Bureau of Labor Statistics, *Occupational Outlook Handbook, 2010-11 Edition*, available at: <http://www.bls.gov/oco/ocos074.htm> (accessed May 26, 2011).

<sup>42</sup> Author's synthesis of input provided during HHS Health IT Standards Implementation Workgroup Hearings, January 10-11, 2011 and HHS Health IT Policy Committee Meaningful User Workgroup Hearings, May 13, 2011.

<sup>43</sup> Information about the CHIME State CIO Network available at: <http://www.ciostatenet.org/> (accessed May 26, 2011).

<sup>44</sup> *Health Information Technology Policy Committee Meaningful Use (MU) Workgroup May 13, 2011 Public Testimony Panel 3: Experience from the Field* (2011) (testimony of Susan Davis RN, EdD. President and CEO St. Vincent's Medical Center and St. Vincent's Health Services; Ascension Health Market Leader for the New York and Connecticut Region, and Chair of the Ascension Health EHR Governance Council). [http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS\\_0\\_12811\\_954637\\_0\\_0\\_18/muwg-davis-testimony-05-13-11.pdf](http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS_0_12811_954637_0_0_18/muwg-davis-testimony-05-13-11.pdf).

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<sup>48</sup> The Office of the National Coordinator for Health Information Technology, *Community College Consortia to Educate Health IT Professionals in Health Care Program*, available at: [http://healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_community\\_college\\_program/1804](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_community_college_program/1804) (accessed May 26, 2011).

<sup>49</sup> The Office of the National Coordinator for Health Information Technology, *University Based Training Program Satisfying the Growing Demand for Leaders in Health IT*, available at: [http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS\\_0\\_11673\\_954709\\_0\\_0\\_18/UBT-Flyer-051811.pdf](http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS_0_11673_954709_0_0_18/UBT-Flyer-051811.pdf) (accessed May 26, 2011).

<sup>50</sup> Office of the National Coordinator for Health Information Technology. [http://healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_state\\_health\\_information\\_exchange\\_program/1488](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_state_health_information_exchange_program/1488) (accessed May 30, 2011).

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<sup>51</sup> Office of the National Coordinator for Health Information Technology. [http://healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_state\\_health\\_information\\_exchange\\_program/1488](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_state_health_information_exchange_program/1488) (accessed May 30, 2011).

<sup>52</sup> Direct Project Web Site. <http://wiki.directproject.org/> (accessed May 30, 2011).

<sup>53</sup> Office of the National Coordinator for Health Information Technology. [http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS\\_0\\_0\\_5545\\_1488\\_17157\\_43/http%3B/wci-pubcontent/publish/onc/public\\_communities/ae/arra/state\\_hie\\_program\\_portlet/files/state\\_hie\\_program\\_information\\_notice\\_final.pdf](http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS_0_0_5545_1488_17157_43/http%3B/wci-pubcontent/publish/onc/public_communities/ae/arra/state_hie_program_portlet/files/state_hie_program_information_notice_final.pdf) (accessed May 30, 2011).

<sup>54</sup> The HIPAA Privacy Rule protects the privacy of individually identifiable health information, and the HIPAA Security Rule sets national standards for the security of electronic protected health information.

<sup>55</sup> *Markle Survey on Health in a Networked Life 2010*, January 2011, Markle Foundation, available at: [http://www.markle.org/sites/default/files/20110110\\_HINLSurveyBrief\\_1.pdf](http://www.markle.org/sites/default/files/20110110_HINLSurveyBrief_1.pdf) (accessed May 30, 2011).

<sup>56</sup> Patients may look to several organizations designed to help navigate the new world of electronic health records, including Georgetown University's Center on Medical Records Rights and Privacy, which provides state-specific guides to help consumers access their medical records and electronic medical records, and The Center for Democracy and Technology's Health Privacy Project, a resource for information on medical records confidentiality.