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HITECH Revisited

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California HealthCare Foundation
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PREPARED BY:

Manatt Health Solutions
William S. Bernstein, J.D.
Helen R. Pfister, J.D.
Susan R. Ingargiola, M.A.

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Introduction

A Note from the Funders

On February 17, 2009, President Obama signed the American Recovery and Reinvestment Act, which included historic provisions for transforming the country's health care system from a paper-based to a digital infrastructure. These provisions, known as the Health Information Technology for Economic and Clinical Health Act (HITECH), were designed to improve the quality, efficiency, and coordination of health care through financial incentives for providers to adopt and meaningfully use electronic health records (EHRs).

Over the course of the past year and a half, the two federal agencies charged with overseeing HITECH's implementation—the Office of the National Coordinator for Health Information Technology (ONC) and the Centers for Medicare and Medicaid Services (CMS)—have been diligently implementing the new law's various provisions, seeking to reshape the way health information is documented, exchanged, and used in the hope of creating a foundation for an improved health care system. It has been, and will continue to be, no small task. Both agencies have released proposed regulations and funding opportunities. With a critical mass of federal funding awarded and on-the-ground implementation underway, now is an appropriate time to pause briefly, take stock, and evaluate the trajectory in which HITECH is headed. Specifically, now is the time to ask:

- ▶ Are the policies and programs being implemented likely to result in a health care system that is networked, interoperable, and focused on coordination of care, as has been so thoughtfully articulated by National Coordinator Dr. David Blumenthal?
- ▶ Are the financial incentives, infrastructure-building activities, workforce training, and EHR adoption support efforts that are underway leading toward significant levels of provider EHR adoption?
- ▶ Will the policies being implemented improve clinical decision-making at the point of care?

The California HealthCare Foundation, the Colorado Health Foundation, and the United Hospital Fund jointly commissioned Manatt Health Solutions (Manatt) to analyze these and other questions, and to provide a candid evaluation of where HITECH stands, what challenges it faces, and what specific actions can be taken to achieve its goals. Manatt has a wealth of hands-on involvement with HITECH's development and implementation, including having authored multiple policy briefs on health information technology (IT) financing, governance, and privacy and security, assisting states in their development of statewide health information exchange (HIE) networks, and working with a wide range of stakeholders—including payers, large hospital systems, community health centers, and physician practices—on strategy and implementation efforts to use health IT to improve health care quality and efficiency.

To inform its analysis, Manatt interviewed 24 health IT leaders representing a wide range of stakeholder groups. A number of those interviewed have been actively engaged in the development of federal policy for many years, with some playing important advisory roles in the current administration. These included Dr. Janet Corrigan, President of the National Quality Forum; Helen Darling, President of the National Business Group on Health; Dr. John Glaser, Chief Technology Officer at Partners HealthCare; Dr. Mark Leavitt, former Chair of the Certification Commission for Health IT; Deven McGraw, Director of the Health Privacy Project at the Center for Democracy and Technology; and John Rother, Executive Vice President of AARP.

Other interviewees included state leaders who are at the forefront of implementing HITECH through the development of state HIE networks

and Medicaid policies to support meaningful use of EHRs: Brent Antony, Chief Information Officer, Bureau of TennCare, State of Tennessee; Rachel Block, Deputy Commissioner for Health IT, State of New York; Toby Douglas, Chief Deputy Director, Health Care Programs, California Department of Health Care Services; Dr. Jim Figge, Medical Director, New York State Department of Health, Office of Health Insurance Programs; Jonah Frohlich, Deputy Secretary for Health IT, State of California; and Dave Goetz, Commissioner of Finance and Administration, State of Tennessee.

Interviewees also included individuals with experience implementing EHR systems in a wide range of provider settings, such as hospitals, small physician practices, and community health centers, including those in rural areas. These included Pamela Brier, President and CEO of Maimonides Medical Center; Dr. David Cohen, Senior Vice President of Clinical Affairs and Senior Vice Chairman of the Department of Medicine, Maimonides Medical Center; Dr. Allen Dobson, President of Cabarrus Family Medicine and of Community Care of North Carolina; Robert J. Henkel, President of Healthcare Operations and Chief Operating Officer, Ascension Health; Michael Lardiere, Director of Health IT and Senior Advisor for Behavioral Health, National Association of Community Health Centers; Susan Nestor Levy, Chief Advocacy Officer, Ascension Health; Dr. David Kibbe, Senior Advisor to the American Academy of Family Physicians; Dr. Amanda Parsons, Assistant Commissioner to the Primary Care Information Project, New York City Department of Health and Mental Hygiene; Carol Raphael, President and CEO, Visiting Nurse Service of New York; Bill Spooner, Senior Vice President and Chief Information Officer, SHARP HealthCare; and Micky Tripathi, President and CEO, Massachusetts eHealth Collaborative.

The interviews were conducted by telephone during the fall of 2009 and winter/spring of 2010. Respondents were given written interview guides before their interviews. All interviews were transcribed and the quotations included herein were submitted to the respondents for review. A complete list of interviewees appears in Appendix A.

This report sets forth Manatt’s analysis of the trajectory in which HITECH is headed and recommendations for mid-course corrections that may help to achieve HITECH’s goals. Although they have had the opportunity to review and comment on the report, the findings and recommendations in this report do not necessarily reflect the views of the supporting foundations. The report is offered in the spirit of providing insight from the field to help Congress and the administration fully realize HITECH’s vision.

Overview

HITECH’s statutory framework sets forth a two-part structure for achieving widespread adoption and use of health IT:

- 1. HITECH provides \$2 billion in discretionary funding** for ONC to invest in new programs to support health IT adoption and implementation, HIE infrastructure development, health IT workforce training, and research—collectively, “health IT infrastructure support.” A brief description of each of these new programs, including their current status, is set forth in Table 1 on the following page.
- 2. HITECH authorizes Medicare and Medicaid incentive payments** to eligible professionals and hospitals for adoption and meaningful use of certified EHRs.¹ CMS has estimated that between \$14.1 and \$27.5 billion in

funding will be distributed by Medicare and Medicaid through the EHR incentive programs, though this estimate is expected to increase significantly as a result of the recently-enacted expansion of program eligibility to hospital-based professionals.²

HITECH’s funding priorities will shape the country’s transformation from paper-based to digital health records. The amount of funding available for health IT infrastructure support could be less than 10 percent of what will likely be spent on provider EHR adoption incentives. This imbalance in funding could lead to siloed paper documentation systems being replaced by siloed electronic documentation systems—a major policy risk. There is unanimous agreement that HITECH would be judged a failure should this occur.

That risk aside, the health IT experts interviewed for this report felt that HITECH is a major step forward, and expressed optimism that its investments will lead to measurable improvements in the health care system, especially when complemented by the types of payment reforms included in the recently-enacted health reform package.

Interviewees applauded Congress, ONC, and CMS for knitting together a series of programs that address—comprehensively—the myriad needs of health care providers transitioning to electronic systems. Many interviewees agreed that HITECH’s programs represent a sensible structure and strategy for driving the use of health IT to improve care quality and efficiency. According to Deven McGraw, Director of the Health Privacy Project at the Center for Democracy and Technology, HITECH’s programs are the result of “a conscious attempt to put money in all of the places money

Table 1. HITECH Programs and Funding to Date

PROGRAM DESCRIPTION	FUNDING
<p>Health Information Technology Extension Program: Designed to offer technical assistance, training, and other support services to help physicians and other providers in the adoption and meaningful use of EHR systems.</p>	<p>In February 2010, ONC announced the first cycle of awards under this program, providing \$375 million to create 32 Regional Extension Centers. In April 2010, ONC announced the second and final cycle of awards under the program, providing \$268 million to create another 28 Regional Extension Centers. In addition, ONC announced the availability of approximately \$25 million for Regional Extension Centers to specifically support critical access hospitals and rural hospitals.</p> <p>ONC has also allocated \$50 million to establish a national Health Information Technology Research Center to foster collaboration among the Regional Extension Centers and with other stakeholders, to identify and share best practices in EHR adoption, effective use, and provider support.</p>
<p>State Health Information Exchange Cooperative Agreement Program: Designed to fund efforts at the state level to establish and implement appropriate governance, policies, and network services within the broader national framework, to build capacity for statewide HIE.</p>	<p>The first cycle of state HIE awards, announced by ONC in February 2010, provided \$386 million to 34 states or State-Designated Entities, the District of Columbia, Puerto Rico, and the U.S. territories. In March 2010, a second round of state HIE awards was announced, providing \$162 million to 16 states or State-Designated Entities.</p>
<p>Health Information Technology Workforce Development Program: Designed to establish and/or expand education programs for training health IT professionals.</p>	<p>ONC has set aside \$120 million for the Health IT Workforce Development Program. It released \$84 million in grants on April 2, 2010 through four separate programs: 1) the Community College Consortia Program; 2) the Curriculum Development Centers Program; 3) the Competency Examination Program; and 4) the University-Based Training Program.</p>
<p>Beacon Community Cooperative Agreement Program: Designed to build and strengthen health IT infrastructure and HIE capabilities, including strong privacy and security measures for data exchange within 15 communities.</p>	<p>ONC has allocated \$265 million for the Beacon Community Program. Of that amount, \$220 million has been awarded through 15 cooperative agreements with integrated health systems, consortia of health care providers, and government entities, to build on existing infrastructure to support HIE. An additional \$30 million was made available on May 26, 2010 for two more awards. The remaining \$15 million will be used to provide technical assistance to the grantees and to evaluate the success of the program.</p>
<p>Strategic Health IT Advanced Research Projects (SHARP) Program: Designed to fund research in areas where breakthrough advances are needed to address barriers to the widespread adoption of health IT.</p>	<p>In April 2010, ONC awarded four cooperative agreements of \$15 million each to the Mayo Clinic of Medicine, which will focus its research on promoting the secondary use of EHR data while maintaining privacy and security; the University of Illinois at Urbana-Champaign, which will focus its research on ensuring the security of health IT; the University of Texas Health Science Center at Houston, which will focus its research on enabling patient-centered cognitive support for clinicians; and Harvard University, which will focus its research on making progress toward new health care application and network-platform architectures.</p>

Sources: "Selected Health Funding in the American Recovery and Reinvestment Act of 2009," Congressional Research Service. March 17, 2010. Report Number R40181; Press Release. U.S. Department of Health and Human Services, HHS Awards \$144 Million in Recovery Act Funds to Institutions of Higher Education and Research to Address Critical Needs for the Widespread Adoption and Meaningful Use of Health IT. (April 2, 2010); Press Release. U.S. Department of Health and Human Services, HHS Announces \$267 Million in Recovery Act Funds for New Health IT Regional Extension Centers. (April 6, 2010); "Beacon Community Cooperative Agreement Program: Facts at a Glance." U.S. Department of Health and Human Services. (May 4, 2010).

was needed to wire the health care system in a way that would truly advance people’s health.”

Interviewees also praised the collaboration HITECH has spurred among health care stakeholders in communities across the country. Said Kevin Kearns, President and CEO of Health Choice Network, a network of community health centers in Florida, “The partners that have come together to apply for HITECH’s grant programs is historic. To have Jackson Memorial and North and South Broward hospital districts and the academic institutions all coming together is incredible.”

Interviewees commented favorably on the transparency and speed with which ONC and CMS are working to implement HITECH. CMS, for example, has already released a notice of proposed rulemaking to implement the Medicare and Medicaid EHR incentive programs (Meaningful Use NPRM), as well as a series of subregulatory guidance documents directed at state Medicaid agencies.³ The state Medicaid experts interviewed for this report described a thoughtful, staged process, consisting of familiar tools, consistent communication, and collaboration within states, among states, and between states and CMS. According to Dr. Jim Figge, Medical Director in the Office of Health Insurance Programs at the New York State Department of Health, “There is a fair amount of networking going on... it has been a good model of cooperation. Hopefully it will continue and we will keep collaborating as we work on the framework for the nationwide health information network.” Another aspect of the Medicaid EHR incentive program that interviewees considered noteworthy was HITECH’s authorization of an enhanced federal match—90 percent—for expenditures incurred by states in administering the EHR incentive program. These could include expenditures on activities in support of HIE, along

with others that serve as a direct accelerant to the success of a state’s Medicaid EHR incentive program and that facilitate the dispersion and use of certified EHRs.⁴

CMS’s and ONC’s efforts to ensure coordination among the diverse programs they have implemented were viewed by interviewees as important to ensuring collaborative—as opposed to siloed—investments in health IT infrastructure. Called out as particularly noteworthy were CMS’s and ONC’s requirements that state agencies developing HIE networks under the State HIE Cooperative Agreement Program (State HIE Program), state Medicaid agencies implementing the Medicaid EHR incentive program, and Beacon Community Cooperative Agreement Program awardees collaborate closely. This collaboration is intended to ensure that their efforts result in the development of a networked infrastructure through which health information can be exchanged to support multiple public policy goals, from facilitating care coordination to improving reporting of public health data.

However, while acknowledging that HITECH has the right goals and ingredients, and commending ONC’s and CMS’s implementation efforts, interviewees voiced concern that, without course correction in certain areas, the transformative potential of health IT that HITECH envisioned may not be realized. The remainder of this paper discusses these concerns. It begins with a summary of findings and recommendations then goes into a detailed discussion of each issue of concern.

Summary of Findings and Recommendations

The findings and recommendations below are based on Manatt's analysis of HITECH, interviews with health IT experts, and Manatt's own field experience. Some of the findings and recommendations relate to the statute itself, while others concern ONC's and CMS's implementing regulations.

1 FINDING: Eligible health care providers, especially small and rural practices and certain community health centers, may have difficulty meeting the proposed meaningful use criteria in the Meaningful Use NPRM, which may result in EHR adoption rates that are less than anticipated and/or hoped for.

RECOMMENDATION: CMS should revise the proposed meaningful use criteria so they are more achievable and reflect the ability of current systems to support providers as they seek to integrate ambitious new EHR capabilities into their clinical routines and daily work flows.

2 FINDING: Eligible health care providers may have difficulty meeting the proposed timetable for meaningful use. Also, the development of meaningful use criteria in three stages, only the first of which has been released, means health care providers do not know what requirements they will have to meet in future years, handicapping their ability to choose a health IT strategy that effectively suits their needs.

RECOMMENDATION: CMS should release a full meaningful use roadmap by the end of calendar year 2010, and adopt an incremental approach to achieving meaningful use over a longer time period.

3 FINDING: The administration's approach to advancing interoperability relies too heavily on simple point-to-point connections and on faith in the private market, which is unlikely to yield the type of multi-point interoperability necessary for high value quality improvement and cost efficiency gains.

RECOMMENDATION: CMS should ensure that the final meaningful use regulation includes provisions directly tying meaningful use to participation in HIE networks being developed under the State HIE Program.

4 FINDING: Stronger policies to encourage clinical practices that are consistent with evidence-based treatment guidelines are necessary to ensure improvements in patient health outcomes.

RECOMMENDATION: CMS should ensure that the final meaningful use regulation more strongly encourages health care providers to utilize robust clinical decision support at the point of care.

5 FINDING: It is important to allow states to use meaningful use as a policy lever by which to drive improvements in the care provided under their Medicaid programs. CMS's proposal to deem any Medicare hospital that is a meaningful user under the Medicare EHR incentive program (and is also eligible for Medicaid EHR incentive payments) a meaningful user under the Medicaid EHR incentive program would inhibit states' ability to do so.

RECOMMENDATION: CMS should abandon the hospital meaningful use deeming proposal, thus enabling state-specific meaningful use objectives (which must be approved by CMS) to apply to all eligible hospitals and professionals receiving Medicaid EHR incentive payments provided such

objectives advance Medicaid interoperability and quality improvement goals.

6 FINDING: Expanding eligibility for health IT adoption incentives to long-term care facilities and many behavioral health providers will help to enable truly coordinated care across all care settings.

RECOMMENDATION: Congress should pass legislation either making currently excluded health care providers eligible for the Medicare and Medicaid EHR incentive programs or authorizing separate funding to support EHR adoption and ongoing use by such providers.⁵

7 FINDING: The services to be provided by HITECH's Health IT Extension Program's Regional Extension Centers will be essential to successful EHR adoption and meaningful use, but Regional Extension Centers may face sustainability and operational challenges.

RECOMMENDATION: ONC should closely evaluate the effectiveness of the Regional Extension Centers and, where sustainability and/or operational challenges exist, develop alternative approaches to ensure the provision of EHR adoption and implementation support services on an ongoing basis.

8 FINDING: HITECH is a necessary but not sufficient step to achieve greater quality and efficiency in health care. While the recently-passed health reform package includes a number of important provisions to test new health care delivery and payment models, broad-scale payment and delivery reform will be a necessary complement to HITECH's considerable investment.

RECOMMENDATION: Congress and CMS should continue to implement policies, targeted especially toward Medicaid and the commercial health insurance market, that encourage physicians and hospitals to organize into systems of care that deliver high performance through the use of health IT.

Findings

“Most small and medium practice physicians are not using their EHRs to engage in the types of quality improvement activities required in the NPRM. Even though their EHRs may have the capacity to electronically prescribe medications, for example, only a minority of physicians are using it.”

— DR. DAVID KIBBE

Eligible Health Care Providers May Have Difficulty Achieving Meaningful Use

In the Meaningful Use NPRM, CMS proposed a series of objectives and associated measures that an eligible professional or hospital must meet to qualify as a meaningful EHR user in the first stage of the Medicare and Medicaid EHR incentive programs (the three stages of meaningful use are described on page 14). These measures can be broken into three categories: (1) functional measures that rely solely on capabilities included as part of certified EHRs; (2) functional measures that require HIE; and (3) quality measures based on reporting of clinical information. A brief description of each category is provided below.

1. Functional Measures That Rely Solely on Capabilities Included as Part of Certified EHR Technology. Measures in this category place substantial reliance on the inherent capabilities of the certified EHR itself. Providers can achieve some of these measures with relatively little effort; an eligible professional or hospital need only enable the relevant EHR capability. For other measures, the provider must use the capability and quantify this use.

EXAMPLE: For the stage 1 objective, “Maintain Active Medication List,” CMS set as the corresponding measure the following: “At least 80 percent of all unique patients seen by the eligible professional or admitted by the eligible hospital have at least one entry (or an indication of ‘none’ if the patient is not currently prescribed any medication) recorded in structured data.”

2. Functional Measures That Require Health Information Exchange. Measures in this category contemplate a provider’s use of certified EHR technology to effect the electronic exchange of information from third-party data sources.

EXAMPLE: For the stage 1 objective, “Incorporate Clinical Lab-Test Results into EHR as Structured Data,” the corresponding measure is the following: “At least 50 percent of all clinical laboratory results ordered by the eligible professional or by an authorized provider of the eligible hospital... whose results are in either... a positive/

negative or numerical format are incorporated in certified EHR technology as structured data.” Other stage 1 measures with similar information exchange requirements include those pertaining to e-prescribing and insurance eligibility and claims. Providers are also required to conduct isolated, one-time tests of an EHR’s capability to electronically exchange clinical and certain other types of information, such as problem lists, medication lists, allergies and diagnostic test results, among providers of care and patient-authorized entities.

- 3. Quality Measures Based on Reporting of Clinical Information.** In this category, CMS proposed to require reporting of information on clinical quality measures (though not electronically before 2012). Some of these measures are included in Medicare’s physician and inpatient hospital quality reporting programs. An eligible professional must report a core set of measures, as well as (to the extent applicable) a specialty-specific set of measures. Eligible professionals and eligible hospitals are required to report on measures for all patients, not just Medicare and Medicaid beneficiaries.
- EXAMPLE:** An eligible hospital must report its “[o]verall inpatient 30-day hospital readmission rate.”

There is strong support for HITECH’s focus on meaningful use as opposed to simple adoption of EHRs. Said Dr. Janet Corrigan, President and CEO of the National Quality Forum, “I think CMS’s proposed framework for meaningful use, which builds on the six priority areas and goals advanced by the National Priorities Partnership, (a group of 32 partner organizations, convened by the National Quality Forum, that has identified a series of

priorities to eliminate harm, waste and disparities in the health care system) is spot-on.”

Yet, interviewees voiced concern about whether the proposed meaningful use requirements are achievable, whether providers need more flexibility if they are to make progress in reaching HITECH’s goals, and whether the complexity of the proposed meaningful use requirements will retard, rather than encourage, EHR adoption and use.

The Small/Medium Physician Practice and Health Center Perspective

Small physician practices and other providers not associated with hospitals or health systems, such as community health centers, face particular health IT adoption barriers, including lack of technical expertise and financial resources. These challenges may make small providers’ achievement of the NPRM’s meaningful use requirements especially difficult.

According to Dr. Allen Dobson, President of Cabarrus Family Medicine and of Community Care of North Carolina, a community network of physicians and hospitals throughout the state:

We know by looking across the country that it is the large integrated health care delivery systems that have the resources on hand to help them achieve meaningful use. Small independent practices, on the other hand, will have to rely more intensely on their vendors to help them. In primary care, especially, we will need outside help to adopt, implement, and achieve the meaningful use measures CMS is proposing....

The last decade of EHR development has produced electronic data but it hasn’t really produced tools to help providers care for patients or exchange information. Data now

sits in electronic silos. We, the vendor and provider communities, have some real work to do to create products that can enable the achievement of meaningful use.

According to Dr. David Kibbe, Senior Advisor to the American Academy of Family Physicians, 70 percent of whose members practice in groups of ten or fewer and over half in groups of four or fewer, the majority of small and medium physician practices have chosen not to adopt EHRs, and may choose to forego attempting to achieve meaningful use in the early stage of the EHR incentive programs because of complexity and cost: “As the rules are currently written, most of the achievement of meaningful use will occur among hospitals and physicians in large groups and hospital-owned practices, which will benefit from the hospitals’ experience, momentum, and resources.”

Of the physicians that have adopted EHRs, only a minority are using them as a means of quality improvement. Said Dr. Kibbe:

Most small and medium practice physicians are not using their EHRs to engage in the types of quality improvement activities required in the NPRM. Even though their EHRs may have the capacity to electronically prescribe medications, for example, only a minority of physicians are using it. We have a lot of physicians who have EHRs but who have turned off many of their features and functions, which means they will have to engage in significant workflow changes to become meaningful users.

Added Dr. Kibbe, “The idea behind HITECH was to encourage physicians in practices around the country—not just the big ones like Kaiser or the Cleveland Clinic or practices tied to hospitals—to

meaningfully use EHRs.” As currently structured, however, the Meaningful Use NPRM could lead to massive incentive outlays to hospitals and large physician group practices, which have the resources to achieve meaningful use, leaving behind small and medium physician practices, which are likely to have a harder time satisfying the all-or-nothing structure of the NPRM.

In contrast, many community health centers, including federally qualified health centers (FQHCs), historically have placed a focus on health IT adoption, putting them slightly ahead of the meaningful use curve. Kevin Kearns, President and CEO of Health Choice Network, noted that he is confident in community health centers’ ability to get down the meaningful use path: “Our centers have been on EHRs for a while and now they will just have to do a few things differently, though that is not to say that the effort needed to achieve meaningful use is in any way a small one.”

Other community health centers, however, will have more difficulty achieving meaningful use. For example, unlike their urban counterparts, rural health care providers can face health IT adoption challenges that stem from their remote locations. According to Michael Lardiere, Director of Health Information Technology and Senior Advisor for Behavioral Health at the National Association of Community Health Centers, health centers in rural areas are likely to find the meaningful use measures that rely on HIE hard to meet. Many health centers in rural areas simply do not yet have the means by which to share information electronically with one another. Said Lardiere, “Lack of last-mile broadband connectivity compounds this problem. The pipes just are not there for rural health centers to share data.”

The ability to generate and transmit permissible prescriptions electronically will also be a challenge

for rural health centers, as they are often serviced by locally-owned pharmacies that do not have the capacity to receive such prescriptions. Recognizing this challenge, the National Association of Community Health Centers has recommended that CMS revise the e-prescribing requirement in the NPRM so that it applies only to instances where the pharmacy is able to receive prescriptions electronically.⁶

In addition to challenges in achieving meaningful use, rural health care providers may have difficulty meeting the Medicaid EHR incentive program's eligibility requirements. By statute, Medicaid EHR incentives are available to eligible professionals who "practice predominantly" in FQHCs or rural health clinics and have at least 30 percent of their patient volume attributable to "needy individuals," which includes Medicaid recipients, Children's Health Insurance Program recipients, patients furnished uncompensated care, and patients whose charges are reduced by the provider based on income considerations.⁷ CMS proposed to define "practices predominantly" as 50 percent of an eligible professional's total patient encounters over a six-month period occurring at a FQHC or rural health clinic.⁸

Because many rural health center physicians practice there only part-time, they may have difficulty meeting this predominant-practice threshold. And those that do meet it may have further difficulty meeting the 30 percent needy individual case-load threshold. This is because rural health centers are often the only sources of care in remote regions, and thus treat significant numbers of patients with commercial health insurance and/or Medicare.

The Hospital and Health System Perspective

According to a January 2010 American Hospital Association (AHA) survey, less than 1 percent of hospitals said that their systems are currently capable of meeting all stage 1 meaningful use criteria. The majority of hospitals (55 percent) also reported that they would not be capable of meeting all criteria in 2015.⁹

According to Robert J. Henkel, President of Healthcare Operations and Chief Operating Officer at Ascension Health, a large hospital system operating in various states across the country:

During our journey to the EHR over the last seven years, we have invested more than \$900 million in capital and operating costs for health IT. Considerable additional investments will be necessary for all Ascension Health acute care hospitals to achieve meaningful use. Our early estimate shows an additional \$87 million will be required for eight of our sites to achieve meaningful use according to the recommendations of the federal HIT Policy Committee. The Medicare incentives available for these eight sites are estimated at only \$40 million, less than half of the necessary amount.

Said Dr. John Glaser, Chief Information Officer at Partners HealthCare, generally viewed as one of the most electronically sophisticated health systems in the country, "Partners probably won't achieve meaningful use on the hospital side in 2011, but on the outpatient side we might." While it is not likely to be the health system's biggest challenge, Dr. Glaser offered the reporting of smoking status as an example of a behavior change that could prove challenging at Partners. "Only 29 percent of our doctors report smoking status right now. The hardest part of all this will

be convincing providers to change their behavior.” Under the NPRM, eligible professionals and eligible hospitals must record smoking status in their EHR for at least 80 percent of all unique patients 13 years old or older.

Maimonides Medical Center, in Brooklyn, New York, is nearly a decade into its transition to EHRs and has a long history as an innovator in HIE. It is a founding member of the Brooklyn Health Information Exchange and was recently awarded \$6.7 million by the State of New York to leverage its health IT investment to foster a new medical home model of care focusing on behavioral health. According to Pamela Brier, the hospital’s president, “We expect to meet the Meaningful Use NPRM’s meaningful use criteria in 2011 and we will move heaven and earth to get there.” However, the hospital’s Dr. David Cohen, Senior Vice President, Clinical Affairs and Senior Vice Chairman, Department of Medicine at Maimonides, acknowledged that “as proposed, the meaningful use measures require significant workflow changes for health care providers. The requirements related to engaging patients in their health care (e.g., those that require providers to give patients electronic access to their information) may pose significant challenges.”

Other interviewees suggested it would be particularly difficult to meet the clinical lab data requirement described above. Said Dr. Mark Leavitt, retired Chairman of the Certification Commission for Health IT, “Nobody can send lab orders electronically except in integrated delivery systems. The bulk of physician offices are not sending electronic orders to labs. There are no accepted standards.” Added Leavitt, “The effect of high stage 1 requirements for the electronic receipt of lab data, in the absence of unambiguous standards, could encourage the establishment

of an even greater number of expensive non-standardized connections to laboratories.”

Some interviewees suggested that the NPRM took an all-or-nothing approach to meaningful use of EHRs, which did not recognize the different paths health care providers may take to get there. Further, it made no distinction between providers that have done very little with regard to health IT and those that have implemented many health IT functions but that may not meet the full set of objectives proposed by CMS.

Bill Spooner, Senior Vice President and Chief Information Officer at SHARP HealthCare in San Diego, spoke to this issue: “The Meaningful Use NPRM essentially says that if I get a 99 on a test, I fail. If for some reason I miss one requirement, I don’t get any money. That’s going to eliminate a lot of people. If my computerized physician order entry percentage is 79 percent not 80 percent, I don’t get anything. It’s just not realistic.” (Under the NPRM, eligible professionals must use computerized physician order entry for 80 percent of all orders to achieve meaningful use.)

An alternative to the all-or-nothing approach would help address many of these concerns. Such an approach could be modeled on the Vermont Blueprint for Health, which provides financial incentives that are tied to the achievement of specific criteria but allows providers to progress incrementally through the criteria, and to receive incentives while they do so.¹⁰ Under three pilot programs being conducted as part of the Blueprint for Health initiative, primary care practices receive an enhanced payment based on their degree of achievement of the National Committee for Quality Assurance’s Physician Practice Connections–Patient Centered Medical Home criteria. Every six months, practices are re-scored against the criteria. This approach provides an incentive for

ongoing quality improvement, since payment is adjusted up or down based on five point incremental changes in score.¹¹

Interviewees also noted that the NPRM focuses solely on the performance of individual hospitals and ignores the role of hospital systems, despite their prevalence throughout the country. Hospital systems—defined by the AHA as two or more hospitals owned, leased, sponsored, or contract managed by a central organization—have made significant investments and progress in group purchasing and implementation of health IT tools at the system level.¹² Most hospital systems make their health IT investments as part of a larger, complex capital budgeting process. In an effort to provide more cost-effective, higher-quality care, they often dedicate considerable resources to coordinating, centralizing, and streamlining health IT services across the various hospitals in their system, including budgeting, investment, and vendor contracting.

By failing to allow hospitals to qualify for EHR incentive payments on a system-wide basis, both HITECH and the Meaningful Use NPRM missed an opportunity to leverage the health IT implementation progress hospital systems have already made. Further, the inability of hospital systems to qualify for EHR incentives on a system-wide level could lead such systems to halt in-progress and planned health IT implementation programs at certain hospitals to shift resources to other hospitals in the system, counter to the intentions and goals of the EHR incentive programs.

According to Robert J. Henkel, President of Healthcare Operations and Chief Operating Officer at Ascension Health, “Health systems can bring the benefit of administrative efficiencies to patient care, but different hospitals can have vastly varied

health IT implementation experience. To ensure that all hospitals in multi-hospital health systems are able to achieve meaningful use in a consistent manner, and in recognition of the fact that hospitals within a health system may be at varying stages of EHR adoption, we think CMS should create an alternative pathway under which all eligible hospitals that are part of a qualified health system in which meaningful use goals are met on a system-wide rather than hospital-specific basis are deemed to have achieved meaningful use and are exempted from penalties.”

Under the alternative pathway supported by Henkel, all of a qualified health system’s hospitals would be considered meaningful users if 30 percent of the system’s member hospitals meet the stage 1 meaningful use criteria in Fiscal Years 2011 and 2012; 50 percent meet the stage 1 meaningful use criteria in Fiscal Year 2013; and 75 percent meet the stage 1 meaningful use criteria in Fiscal Year 2014. Said Henkel, “Meeting meaningful use at a system-wide level will allow us to bring our hospitals online in a logical, prioritized, success-oriented manner.”

The Meaningful Use Timetable Should Be Extended and Providers Should Know What Requirements They Will Have to Meet in Future Years

While not mandated by statute, CMS proposed a three-stage approach to the adoption of meaningful use criteria. In the Meaningful Use NPRM, CMS proposed specific objectives and measures for stage 1 only, noting its intent to propose stage 2 criteria by the end of 2011 and stage 3 criteria by the end of 2013.¹³ According to CMS, the three stages are intended to reflect reasonable criteria based on currently available technology and provider practice experience that build over

time to a more robust definition of meaningful use, consistent with anticipated development of technology and health IT infrastructure.¹⁴

In the Meaningful Use NPRM, CMS described each stage as follows:

- ▶ **Stage 1** meaningful use criteria focus on:
1) capturing health information in a coded format; 2) using the information to track key clinical conditions; 3) communicating captured information for care coordination purposes; and 4) reporting of clinical quality measures and public health information.
- ▶ **Stage 2** criteria would likely expand upon stage 1 criteria in the areas of disease management, clinical decision support, medication management, support for patient access to health information, transitions in care, quality measurement, research, and bidirectional communication with public health agencies.
- ▶ **Stage 3** criteria would likely focus on achieving improvements in quality, safety, and efficiency, focusing on decision support for national high-priority conditions, patient access to self-management tools, access to comprehensive patient data, and improving population health outcomes.

Most interviewees agreed with the need for providers to move along a continuum and to increase electronic HIE gradually. Said Bill Spooner of SHARP HealthCare, “I think we know what’s going to happen in general. We don’t know specifics but we know that sooner or later we’re going to be doing computerized physician order entry to a high degree, we will have more quality indicators to report, and we’ll be engaging in information exchange.”

But some voiced concern that general knowledge of what might be required to achieve meaningful use may not be enough for providers to make informed purchasing decisions. By waiting to promulgate stage 2 and stage 3 criteria, CMS is effectively requiring providers to adopt EHRs now with no regard for the functionality that will be required to demonstrate meaningful use in the future. Vendors, likewise, are unable to design current systems to meet future meaningful use requirements since they do not know what they will be. In response to these concerns, many have suggested that the final regulation provide a complete roadmap of the full set of meaningful use objectives across all three stages.

Interviewees also voiced concern about the proposed timetable for meaningful use. The HITECH statute allows providers to enter the EHR incentive programs in different years, depending on when they meet the required meaningful use criteria. In the Meaningful Use NPRM, CMS suggested a timeline (depicted in Table 2) by which providers may move through the NPRM’s proposed stages. CMS’s proposed approach permits participants in their first payment year to meet only stage 1 criteria, allowing them to progress to more strict meaningful use requirements in later years. Under this approach, all eligible professionals and hospitals would achieve the same level of meaningful use by 2015, though they could use different schedules to get there.

Interviewees feared that late adopters would be unable to achieve stage 3 meaningful use by 2015. According to Bill Spooner, SHARP HealthCare, “The fact that all providers, regardless of when they first become meaningful users, will be required to achieve stage three of meaningful use by 2015 or face significant financial penalties is unrealistic.”

Table 2. Meaningful Use NPRM Proposed Stages of Meaningful Use Criteria, by Payment Year

FIRST YEAR	PAYMENT YEAR				
	2011	2012	2013	2014	2015+*
2011	Stage 1	Stage 1	Stage 2	Stage 2	Stage 3
2012		Stage 1	Stage 1	Stage 2	Stage 3
2013			Stage 1	Stage 2	Stage 3
2014				Stage 1	Stage 3
2015+**					Stage 3

*Stage 3 criteria of meaningful use or an update to the criteria if one is established through future rulemaking.

**Avoids payment penalties only for eligible professionals in the Medicare EHR incentive program.

HITECH itself does not require that eligible professionals and eligible hospitals achieve stage 3 of meaningful use by a specific date, leaving CMS the ability to adopt a more flexible, incremental approach to achieving meaningful use. The AHA has proposed that CMS allow hospitals to satisfy the meaningful use definition if they meet 25 percent of the NPRM’s proposed (with modifications) objectives in 2011 or 2012, with increasing percentages in future years through 2017.

If not changed in the final regulation, the proposed staging and timing of meaningful use could exacerbate the underlying challenge of meeting the NPRM’s meaningful use criteria.

HITECH Needs a Clear Strategy to Achieve Interoperability

The HITECH statute calls for the “development of a nationwide health information technology infrastructure that allows for the electronic use and exchange of information and that... promotes a more effective marketplace, greater competition... [and] increased consumer choice,”

among other goals.¹⁵ To support the development of this infrastructure, HITECH created the State HIE Program, which provides federal funding to states to establish and implement appropriate governance, policies, and network services for statewide HIE networks.

Acknowledging the importance of interoperability, Dr. David Blumenthal has stated that “... we cannot support arrangements that restrict the secure, private exchange of information required for patient care across provider or network boundaries. Some of these arrangements may improve care for those inside their walls. But ultimately, they have the potential to carve the nation up into disconnected silos of information, and thus, to undermine the vision of a secure, interoperable, nationwide health information infrastructure, which the law requires us to establish.”¹⁶

The Meaningful Use NPRM also expressly acknowledges the benefits of HIE, noting:

[H]ealth information exchanges have the potential to transform the healthcare system by facilitating timely, accurate, and portable health information on each patient at the point of service.... In addition, use of health information exchange models can reduce the need for costly point-to-point interfaces between different EHR tools, as used in laboratories and pharmacies, thus providing a more scalable model of interoperable health information exchange. HIEs promote adoption of certified EHR technology by providing the infrastructure for providers’ EHRs to reach outside of their clinical practice sites and connect with other points of care.... Without health information exchange, electronic health records are simply digitized filing cabinets and will not achieve

their quality of care or cost containment potential.... The inclusion in HITECH of HIE grants to be awarded to States or State-designated Entities by ONC are an additional indication of the symbiotic relationship between health information exchanges and optimal use of EHRs.¹⁷

Despite this, HITECH's implementation to date lacks a clear vision for how to achieve interoperable HIE. The challenge stems, in part, from the statute itself. While touting the benefits of HIE and requiring that health care providers engage in it as a condition of meaningful use, Congress left HIE largely undefined.

According to Dr Blumenthal, "(t)o enable a wide variety of providers—from small practices to large hospitals—to become meaningful users of electronic health records by 2011, we need to ensure the availability of a reliable and secure 'entry level' exchange option that aligns with the long range information exchange vision we have for our nation."¹⁸ Consistent with this short-term objective, the Meaningful Use NPRM encourages point-to-point exchanges of data (e.g., a primary care physician sending a referral and patient care summary to a specialist electronically) rather than more "robust" exchange that enables providers to access patient information from multiple sources. ONC describes the NPRM's approach to interoperability as a necessary first step to broader exchange, which recognizes that providers may have "simpler needs for information exchange, or perhaps less technically sophisticated capabilities."¹⁹

This approach has generated a fair amount of disappointment and concern. One major concern is that it could result in failed investments in products and services that are incapable of

evolving to support the more robust version of HIE that stakeholders agree should be HITECH's ultimate goal. Another concern is that it places a lot of faith in the private market to create more robust interoperability solutions when the private market has failed to do so in the past. The administration appears to anticipate a "natural evolution" from entry level to robust exchange resulting from expected consolidation among health care providers and new payment initiatives that encourage care coordination.²⁰ However, this expectation does not take into account the many barriers that have stood in the way of successful HIE to date.

The administration's approach to interoperability stands in contrast to that of many states. Leaders in these states believe that HIE should be implemented through statewide or community-wide initiatives similar to the regional HIEs that have begun operating across the country, which have a governance structure that consists of HIE participants and that develops policies to ensure privacy and security, shared technical services and standards, and defined clinical improvement goals. For these state leaders, it is incredibly important that federal policy supports participation in these emerging networks, rather than favoring point-to-point exchanges that could have little long-term value.

Jonah Frohlich, the Deputy Secretary for Health IT at the California Health and Human Services Agency, addressed this issue:

CMS missed a significant opportunity to ensure the federal government's health IT investments promote sharing of information across different organizations and in a manner that will advance federal and state public policy goals. The meaningful use proposed NPRM

could have been a market-driving force to use the HIE infrastructure states are building, but it wasn't.... Under the NPRM, providers are given no incentives to participate in state HIE networks, and are left to continue to make investments in proprietary EHR systems and interfaces. It is a bit baffling why the federal government would invest in and promote the need for state networks but not even recognize these networks in defining what constitutes meaningful use. Hopefully, the final meaningful use regulation will correct the problem.

There are different views about the lack of connection between the Meaningful Use NPRM and the State HIE Program. One view is that federal policy leaders do not believe governance at the state and regional levels is necessary to achieve robust interoperability, and that, instead, HIE need only be supported by standards, policies, and services that enable providers and consumers to send information to one another over the Internet.

Others believe that it is too soon to pick one path over another to achieve robust

interoperability. Deven McGraw, Director of the Health Privacy Project at the Center for Democracy and Technology, suggested the federal government is engaged in a "grand experiment" to determine how best to facilitate the type of nationwide health

information exchange that HITECH envisioned. Dr. John Glaser, Vice President and Chief Information Officer at Partners HealthCare, observed that "you are always on dangerous ground when you try to engineer a thing at a maturity level when you really don't understand it well. It's not clear to me it is necessary to engineer a final form of the nationwide health information network in the next few years."

On the other hand, Dr. Mark Leavitt, retired Chairman of the Certification Commission for Health IT, expressed concern that the federal government's periodic, abrupt changes in interoperability strategies could inhibit the development of HIE completely. According to Leavitt, "The picture is so

confused that we basically stopped our attempts to certify HIEs, which was one of the things we were asked to develop under our original contract with ONC. What is coming out of the government right now related to interoperability and HIE is

"Under the NPRM, providers are given no incentives to participate in state HIE networks, and are left to continue to make investments in proprietary EHR systems and interfaces. It is a bit baffling why the federal government would invest in and promote the need for state networks but not even recognize these networks in defining what constitutes meaningful use."

— JONAH FROHLICH

ambiguity.” Added Leavitt, “If you want systems to be interoperable, you need to know what standards they will work against. They also need to connect. But we don’t have interoperability between HIEs and we’ve made backwards progress on standards to define how EHRs connect to HIEs.”

Commissioner Dave Goetz of the Tennessee Department of Finance and Administration expressed similar concerns: “Strong policies incenting health care providers to engage in interoperable HIE are necessary. Without them, HITECH could result in the adoption of EHRs by willing health care providers who have no means by which to exchange information other than on a point-to-point basis.”

HIEs around the country are at various stages of development, so it is unrealistic to expect that all states will develop necessary HIE capacity within the same time frame. However, if meaningful use incentives are not used to support state networks, these networks may have little chance of surviving. According to Goetz, “We need these networks to solve a market failure and to perform functions that serve an enormous public good but that no individual stakeholder has an incentive to perform on their own.”

Pamela Brier, President and Chief Executive Officer of Maimonides Medical Center, suggested that HITECH might have better advanced the goal of achieving an interoperable nationwide network of health information exchange “by devoting more attention to nurturing community-wide care coordination efforts, like those being funded under the innovative, albeit limited, Beacon Community Cooperative Agreement Program.” That program was designed to provide funding to communities with advanced EHR and HIE capacity to build and strengthen such capacity and to achieve—at a community level—measurable improvements

in health care quality, safety, efficiency, and population health. The program was funded at only \$265 million and limited to 15 communities across the nation. Brier also noted that, from a hospital’s perspective, creation of statewide HIE networks makes a lot of sense. “The last thing hospitals need,” said Brier, “is to waste limited resources investing multiple times in different network solutions to get information to the right place at the right time.”

The Statewide HIE Coalition, a coalition of states with HIE plans or capacity that are working to build the infrastructure necessary for nationwide adoption and meaningful use of health IT, has recommended that CMS establish a pathway for meaningful use that would deem eligible hospitals and professionals that participate in qualified HIE networks (developed under the State HIE Program and approved by a state government HIT coordinator) and that satisfy specified measures as having met the meaningful use criteria that rely on HIE.²¹ The pathway would be an alternative to meeting the HIE-reliant meaningful use requirements currently included in the Meaningful Use NPRM, and would give health care providers much needed flexibility.

According to Rachel Block, Deputy Commissioner at the Office of Health Information Technology Transformation, New York State Department of Health, the proposal would help link the EHR incentives to the State HIE Program and ensure that the incentives support the continued development of necessary HIE infrastructure. “From my perspective,” noted Block, “tying meaningful use to participation in statewide networks—rather than to point-to-point exchange requirements for medication and lab results—is much more sensible, as it encourages participation

in publicly spirited networks whose capabilities and value will grow over time.”

The Meaningful Use NPRM Should More Strongly Encourage Use of Robust Clinical Decision Support

HITECH envisions a nationwide health IT infrastructure that “provides appropriate information to help guide medical decisions at the time and place of care.”²² Clinical decision

support is a key element of this. The American Medical Informatics Association adopted the following consensus definition for clinical decision support as part of a national effort to develop a roadmap for more robust clinical decision support adoption and use:

Clinical decision support provides clinicians, patients or individuals with knowledge and person-specific or population information, intelligently filtered or presented at appropriate

times, to foster better health processes, better individual patient care, and better population health. Clinical decision support interventions include alerts, reminders, and order sets, as well as other techniques for knowledge delivery including reference information and education (delivered with or without context sensitivity), health/clinical protocol and workflow orchestration support, display of context-relevant data, topic-oriented documentation forms, and others.²³

“Most current EHRs have limited capacity to provide robust decision support capabilities commensurate with the significant investment and aspirations of HITECH.”

— DAVE GOETZ

According to the Agency for Healthcare Research and Quality, the benefits of clinical decision support are many. Clinical decision support can increase adherence to evidence-based medical knowledge and can reduce unnecessary variation in clinical practice. It can also assist with information management to support clinicians’ decision-making abilities, reduce their mental workload, and improve clinical workflows. When well-designed and implemented, clinical decision

support systems have the potential to improve health care quality, and also to increase efficiency and reduce health care costs.²⁴

The NPRM’s approach to clinical decision support places additional requirements on providers but is likely to yield relatively little value. The NPRM requires eligible professionals and hospitals to implement “five clinical decision support rules relevant to specialty or high clinical priority, including for diagnostic test ordering,

along with the ability to track compliance with those rules.”²⁵ The NPRM assumes that such rules can be embedded in today’s existing EHRs and need not be supported by HIE.

According to Dave Goetz, Tennessee Department of Finance and Administration:

Most current EHRs have limited capacity to provide robust decision support capabilities commensurate with the significant investment and aspirations of HITECH.... What has limited

the utility of the clinical decision support functionality in current EHRs has been that most current EHRs are not built to exchange data with other provider EHR systems unless connected through a health information exchange. Consequently, they are not able to incorporate data from multiple sources (e.g., claims, pharmacy benefit management data, lab data, patient-derived data from a personal health record or disease management system) and have relatively unsophisticated clinical logic capabilities.

A recent *Health Affairs* article, entitled, “The Future of Health Information Technology in the Patient-Centered Medical Home,” highlights seven areas of existing EHR functionality that require further development to successfully support the medical home model of care, widely recognized as critical to care coordination and improved patient health outcomes. One of the areas the authors cite is clinical decision support functionality. They note that, “only a minority of commercially available clinical information systems offer important decision support features such as renal dosing and reminders for chronic diseases. This suggests that vendor applications will need to evolve... in this area.”²⁶

The NPRM, with its requirement that health care providers implement only five clinical decision support rules, is unlikely to result in a significant increase in the volume or quality of clinical decision support employed at the point of care. As noted by Dr. Dobson of Cabarrus Family Medicine and Community Care North Carolina:

If we are to move the bar on quality, safety and efficiency, we will need much more emphasis on clinical decision support. It is important that clinical decision support tools integrate

claims data with clinical data and give that data back to providers and patients in a way that is useful to them. Clinical decision support should improve care provided to patients on an individual basis and should also help us look at the population as a whole, enabling us to identify and help to effectively treat those people, with chronic diseases, for example, who have fallen through the cracks.

To drive health care providers to employ the type of robust clinical decision support that is available today (but which may not be available through stand-alone EHR systems), CMS should amend the NPRM to require health care providers to utilize clinical decision support tools that are characterized by:

- ▶ **Use of a broad set of patient data.** This should include lab values and patient-reported data, to ensure precision in alerting, and to minimize false-positive alerts to, physicians and patients.
- ▶ **Patient and physician specificity.** Alerts generated by the systems should be truly patient-specific and actionable, based on the clinical profile of the patient.
- ▶ **Sophisticated clinical rules.** The clinical rules at the foundation of the clinical decision support system should be designed with sophistication that mirrors the real complexities of patient physiology and care delivery. This includes validation logic to ensure that messages are directed to patients who actually have the relevant conditions, and exclusionary logic to prevent alerts to patients for whom an exception applies (e.g., a normally recommended medication is contraindicated because of another of a patient’s conditions).

- ▶ **Incorporation of provider feedback.** Clinical decision support should incorporate feedback from providers and should use that feedback in subsequent analyses. For example, if a physician indicates that a patient has an allergy to a certain medication, future alerts should not recommend that medication.

In addition, the final meaningful use regulation should encourage providers to demonstrate not only that they have utilized clinical decision support tools but that, in a verifiable way, they have taken appropriate action. This could include requiring evidence that providers either acted on an alert (e.g., stopped a medication, added a medication, ordered a diagnostic or screening test) or that they provided feedback that the alert was not appropriate.

States Need More Flexibility to Leverage Meaningful Use to Improve Their Medicaid Programs

In the Meaningful Use NPRM, CMS proposed to create a definition of meaningful use for providers participating in the Medicare EHR incentive program that would also serve as the floor for providers in the Medicaid EHR incentive program.²⁷ States would be permitted to add additional objectives to the definition of meaningful use for Medicaid purposes, or to modify how the existing objectives are measured, provided that the states' alternatives further promote the use of EHRs and health care quality and do not require additional functionality beyond that of certified EHR technology.²⁸

CMS anticipated that states might use this flexibility, for example, to support statewide HIE capacity by requiring providers to participate in statewide HIE as a condition to receive Medicaid

EHR incentive payments.²⁹ Indeed, the legislature of at least one state, Vermont, has already introduced a bill that would require providers to participate in Vermont's statewide HIE network in order to qualify as meaningful users under Medicaid.³⁰

However, CMS also imposed a significant restriction on states' authority in this area by proposing that any Medicare provider who is a meaningful EHR user under the Medicare EHR incentive program (and is otherwise eligible for the Medicaid incentive payment) is also automatically deemed to be a meaningful EHR user under the Medicaid EHR incentive program.³¹ This is applicable only to eligible hospitals, as eligible professionals cannot receive an incentive payment under both Medicare and Medicaid.

As Commissioner Dave Goetz of the Tennessee Department of Finance and Administration pointed out, this proposal will significantly limit the universe of health care providers to which state-specific meaningful use criteria will apply: "Hospitals deemed meaningful users under Medicare will not have to meet any state-specific additional meaningful use requirements under Medicaid, leaving only children's hospitals and eligible professionals subject to the additional requirements, thereby curtailing a state's ability to effect any meaningful change through this policy lever."

Hospitals, like other health care providers, are unlikely to engage in meaningful HIE without appropriate incentives. This is largely because existing fee-for-service payment models have not incented hospitals, nor their ambulatory provider counterparts, to share information in order to coordinate care. By revising the NPRM to permit states to require hospitals to engage in HIE in order to receive EHR incentive payments, CMS

could provide Medicaid a significant opportunity to reverse this trend.

Health IT Adoption Incentives for Long-Term Care and Behavioral Health Providers Are Necessary to Achieve Truly Coordinated Care

HITECH specifies the types of providers who are eligible for Medicare and Medicaid EHR incentive payments. On the Medicaid side, eligible providers include physicians, dentists, certified nurse-midwives, nurse practitioners, physician assistants practicing in a FQHC or rural health clinic that is led by a physician assistant, acute care hospitals, and children's hospitals.³² On the Medicare side, eligible providers include certain physicians (doctors of medicine or osteopathy, doctors of dental surgery or dental medicine, doctors of podiatric medicine, doctors of optometry, and chiropractors) as well as acute care hospitals and critical access hospitals.³³

Interviewees cited as omissions, which could impede HITECH's ability to enable truly coordinated care, the ineligibility of certain behavioral health providers (e.g., clinical case workers, social workers and other non-physicians who often provide significant support, as well as psychiatric hospitals), post-acute providers, nursing homes, and other long-term care providers, including long-term care hospitals, under both the Medicare and Medicaid incentive programs. Said Carol Raphael, President and CEO of the Visiting Nurse Service of New York, "That's a real sensitive issue for us. We bring home 5,000 people from the hospital every month; we are tied into hospitals and into physicians with whom we share patients with chronic illnesses. It is troubling that post-acute and long-term care providers were not part of the incentive program. They are so vital to what's going on. Forty percent of people who leave hospitals

use post-acute care services and we know that's a very important part of the health care system right now—we can't fathom why post-acute and long-term care providers weren't included."

Recognizing the negative effect the omission of these care providers can have on care coordination, members of Congress have introduced and/or enacted bills to extend Medicare and Medicaid EHR incentives and other benefits to various subsets of the omitted classes of providers. For example, a bill was introduced on April 14, 2010 that would extend eligibility for EHR incentives under both Medicare and Medicaid to select clinical psychologists, clinical social workers and psychiatric hospitals.³⁴ It would also extend eligibility under the Medicaid EHR incentive program to certain mental health and substance abuse treatment facilities. In addition, it would create a new Behavioral Health Information Technology Grant Program under HITECH to provide assistance to mental health treatment facilities, substance abuse treatment facilities, and psychiatric hospitals not otherwise receiving EHR incentives under Medicare and Medicaid to:

- ▶ Facilitate the purchase of health IT;
- ▶ Enhance the use of health IT, including covering costs associated with upgrading to become certified EHR technology;
- ▶ Train personnel in the use of health IT;
- ▶ Improve the secure electronic exchange of health information among behavioral and mental health professionals, substance abuse professionals, and other health care providers, including those providing primary care services;
- ▶ Improve health IT for adaptation to community-based behavioral health settings;

- ▶ Assist with the implementation of telemedicine, including facilitation of distance clinical consultations in rural and underserved areas; and
- ▶ Collaborate and integrate with Regional Extension Centers.

The recently-enacted federal health reform package authorized \$67.5 million for long-term care facilities to assist with costs related to purchasing, leasing, developing, and implementing certified EHR technology, among other things.³⁵ However, this amount is modest when compared to the billions of dollars in EHR adoption assistance authorized by HITECH, and may be too small a sum to stimulate widespread adoption in the long-term care sector.

Congress also recently passed legislation addressing another widely-cited HITECH eligibility omission—hospital-based professionals. As originally passed, HITECH excluded most hospital-based professionals from eligibility under both the Medicare and Medicaid incentive programs, defining hospital-based to mean an eligible professional, such as a pathologist, anesthesiologist, or emergency physician, who furnishes “substantially all” of such services in a hospital setting (inpatient or outpatient) and through the use of the hospital’s facilities and equipment, including qualified EHRs.³⁶

HITECH left CMS with discretion to establish criteria regarding what qualifies as furnishing substantially all of an eligible professional’s services in a hospital setting. In the Meaningful Use NPRM, CMS proposed to define substantially all as furnishing at least 90 percent of services in an inpatient or outpatient hospital setting (including a provider-based outpatient clinic),

as determined by place of service codes. In the Meaningful Use NPRM’s regulatory impact analysis, CMS asserted that approximately 27 percent of all Medicare-eligible professionals; approximately 27 percent of physicians, nurse midwives, and nurse practitioner Medicaid-eligible professionals; and approximately 48 percent of physician assistant Medicaid-eligible professionals would be ineligible for incentive payments under the NPRM’s definition of hospital-based.³⁷ This, among other reasons, caused CMS to reduce the estimated number of eligible professionals for Medicare and Medicaid EHR incentive payments and, in turn, the expected incentive payment outlays from \$44.6 billion net of Medicare penalties to between \$14.1 to \$27.5 billion net of Medicare penalties.³⁸

According to Susan Nestor Levy, Chief Advocacy Officer, Ascension Health, “Excluding physicians who provide the majority of their care in ambulatory settings would have slowed the adoption and implementation of EHRs for these providers and hindered the goals of greater physician-hospital integration that is so crucial for improving quality and reducing the cost of care.” Levy continued, “In just one of Ascension Health’s markets, Milwaukee, Wisconsin and its surrounding areas, the policy would have precluded 167 eligible professionals from obtaining the Medicare EHR Incentives. Assuming those physicians were eligible for the Medicare EHR Incentives beginning in 2011 at \$44,000 per physician, the physicians would have received \$7,348,000 to implement an ambulatory EHR. We are very pleased that Congress acted on this important issue.”

Hospital outpatient clinics, one of the settings in which the hospital-based professionals excluded from EHR incentives under HITECH practice, fill an important niche in the health care delivery system, providing safety-net primary care functions

and specialty care. About one in three hospital outpatient department visits are by Medicaid or Children's Health Insurance Program (CHIP) recipients. Hospital outpatient clinics are a major source of ambulatory preventive care for Medicaid patients as well as specialty care for those with other types of insurance. According to the National Center for Health Statistics' National Hospital Ambulatory Medical Care Survey, approximately 102.2 million visits were made to hospital outpatient departments in 2006, a 37 percent increase since 1996. General medicine clinics (including internal medicine, family practice, and primary care clinics) represented 60.8 percent all hospital outpatient department visits.³⁹

Congress amended the hospital-based provider exclusion as part of the Continuing Extension Act of 2010, enacted on April 15, 2010.⁴⁰ Services furnished in hospital outpatient settings will no longer be excluded from Medicare and Medicaid EHR incentive eligibility.

This change in the eligibility definition can also be expected to increase the role of hospitals in driving EHR adoption under HITECH. It is currently unclear what the impact of the long-term care EHR grants included in the health reform package will be, nor whether behavioral health providers will be the subject of similar legislative enactments in the future.

Regional Extension Centers Should Be Monitored for Sustainability and Operational Challenges

HITECH established the Health IT Extension Program to address barriers to EHR implementation and use faced by many health care providers, particularly small practices and safety-net providers for the underserved.⁴¹ The program, which falls under ONC's jurisdiction,

provides funding for the establishment of Regional Extension Centers (REC) that will offer technical assistance, guidance, and information on best practices to support and accelerate health care providers' efforts to become meaningful users of EHRs. The Health IT Extension Program will also establish a national Health IT Research Center, which will gather relevant information on effective practices from a wide variety of sources across the country and help the RECs collaborate with one another and with relevant stakeholders to identify and share best practices.

By ONC's design, in the first two years, RECs will receive federal funding in two categories: (1) core support, which will be used for outreach and educational activities, grants and program management, local workforce support, and peer-learning and knowledge-transfer activities facilitated by the Health IT Research Center; and (2) direct assistance support, which will be used for direct, on-site technical assistance to providers. Over \$600 million is being made available by ONC in the program's first two years, with RECs being responsible for 10 percent of the annual capital and operating and maintenance funds needed to operate.

In contrast, only \$45 million will be made available by ONC in the program's last two years, for core support only, with RECs approved to continue their operations into years three and four being responsible for 90 percent of the annual capital and operating and maintenance funds needed to operate during that period. This reflects ONC's expectation that RECs should essentially be self-sustaining by their third year:⁴²

From the outset of the four-year project period, the cooperative agreement must include, and the recipient must implement, a plan to build

a direct technical assistance infrastructure that will become self-sustaining by the end of the cooperative agreement's second year.... Therefore, federal support in years three and four is expected to be limited to core activities (e.g., participation in the communities of practice and other peer-learning and knowledge transfer activities facilitated by the [Health IT Research Center]....This partnership both reflects HHS experience with start-up activities associated with these complex endeavors and the HHS's projection that—once up and operating—Regional Centers may be receiving fees for the services and support they will be providing to providers in their geographic areas. We anticipate that this program income will be substantial for all successful projects.⁴³

While the Extension Program is widely viewed as integral to the ability of health care providers to adopt and engage in meaningful use of EHRs, a key concern voiced by the health IT experts interviewed for this paper was the ability of RECs to fund 90 percent of their operations in years three and four of the program. ONC's assumption that RECs will be able to craft sustainable business models by year three, and thus require federal funding only to provide core support activities (as opposed to direct technical assistance), may be a risky one.

According to Dr. Amanda Parsons, Assistant Commissioner to the Primary Care Information Project, New York City Department of Health and Mental Hygiene, a current provider of health IT adoption support services, "The structure for Regional Extension Center funding assumed that they should be able to attract funding from the local health system (e.g., plans, hospitals, physicians), but the experience of the Primary Care

Information Project gives us reason to doubt this will occur. In the short term, only providers who qualify for significant meaningful use incentives will have the financial means to join and procure services from Regional Extension Centers."

Added Parsons, "Regional Extension Center sustainability beyond the initial two-year grant period could come from moving providers beyond meaningful use and into participation with delivery system reform programs created in the health care reform package, such as community health teams, accountable care organizations and others."

A recent article in the journal *Health Affairs* explored the challenges facing the Extension Program, including REC sustainability.⁴⁴ The authors found that current providers of health IT adoption assistance, many of whom will serve as RECs, are concerned that funding may be inadequate to meet provider support needs, particularly for small practices, and that HITECH may be raising expectations they may not be able to meet. According to the authors, RECs will face the challenge of making available a broad range of services in a short period of time, including health IT implementation and quality improvement services.

There is nothing in the statute that requires RECs to become self-sustaining by year three of the program. Rather, HITECH merely provided that ONC may not provide more than 50 percent of the capital and annual operating and maintenance funds required to create and maintain a REC, a provision it allowed ONC to waive.⁴⁵

According to Micky Tripathi, President and CEO of the Massachusetts eHealth Collaborative and consultant to the REC operated by the New York eHealth Collaborative, sustainability will indeed be a challenge:

At this point, we don't know exactly what ONC will require of the Regional Extension Centers that choose to participate in years three and four of the program. ONC could require minimal ongoing support or they could require that Regional Extension Centers ensure that providers achieve stages two and three of meaningful use, a taller order that will cost far more in operating budget that must be matched. And because the EHR incentive payments to health care providers decrease in the out years, it may be unrealistic to expect providers to be willing to continue to pay for Regional Extension Center services toward the end of the program, let alone beyond.

Dr. Allen Dobson of Cabarrus Family Medicine and Community Care of North Carolina agreed:

In North Carolina, we have a unique collaboration of providers, led by our Area Health Education Centers and including Community Care of North Carolina, a community health network representing physicians, hospitals, health departments and departments of social services across the state, which will serve as our Regional Extension Center. Right now we

intend for Community Care of North Carolina to contribute funding to ensure ongoing operations but it will be interesting. I'm not sure individual providers are going to be willing to pay high fees for these services, a problem Regional Extension Centers across the country are likely to be up against.

“...Because the EHR incentive payments to health care providers decrease in the out years, it may be unrealistic to expect providers to be willing to continue to pay for Regional Extension Center services toward the end of the program, let alone beyond.”

— MICKY TRIPATHI

That the services of RECs will be necessary in years three and four of the program, and beyond, is not a foregone conclusion. The goal of the RECs in years one and two is to help 100,000 priority primary care providers become meaningful users.⁴⁶ If that goal is met, RECs may have served their purpose. On the other hand, there are likely to be many health care providers, including specialists and others not included on ONC's initial priority list, who would benefit from the type of adoption and implementation support that RECs will provide.⁴⁷

Further, as highlighted in the *Health Affairs* article noted above, the experiences of existing health IT adoption programs, like the New York City Primary Care Information Project and the Massachusetts eHealth Collaborative, indicate that RECs will need practice consultants who have direct experience with small practices, along with technical expertise in EHR software and knowledge of how to adapt

provider workflow for successful EHR use. Individuals with these skill sets are currently in short supply, and health IT assistance programs are concerned about their ability to find qualified staff.

This problem is symptomatic of a larger challenge facing HITECH: lack of a trained health care workforce. While HITECH includes a number of workforce training provisions, there is concern that workforce training is happening during or after—as opposed to before—health care provider EHR adoption.⁴⁸ According to Dr. Mark Leavitt:

It is great that Congress included workforce development, EHR adoption support, HIE infrastructure development, and research and development, etc. But the timing under which they are being implemented/rolled out is wrong. We should start by training the workforce in use of health IT and researching the appropriate ways to develop and use IT tools, then move to development of HIE infrastructure and adoption support programs, then turn on the EHR adoption/use incentive spigot. We are turning on the incentive spigot now but we don't yet have a trained workforce nor research to inform us how to use EHRs more effectively.

Dr. Janet Corrigan concurred: “We need a trained health IT workforce now, but we won't have those people out of the pipeline for years to come.”

In light of the operational and sustainability challenges RECs may face, and recognizing the critical nature of the services they were created to provide, it will be important to closely monitor implementation of the Health IT Extension Program to ensure that the needs of health care providers are being met in the most effective and efficient manner possible.

HITECH Was Only Half the Battle: The Need for Payment Reform

When Congress enacted HITECH, President Obama touted it as a “down payment on health reform”—an IT investment implemented specifically as an accelerator of health care delivery innovation and payment reform. In positioning it this way, the President recognized that health care reform requires an IT infrastructure that can collect, analyze, and share actionable health care data to support improved clinical decisions and outcomes, greater efficiencies, and real care coordination.

A necessary precursor to paying for quality care and improved health outcomes is the ability to aggregate data across an entire episode of care, an effort on which a number of states are already working. According to Dr. Jim Figge, Medical Director in the Office of Health Insurance Programs at the New York State Department of Health, “If you want to have really robust quality metrics... you need to follow the patient. Patients go to more than one place to get care. You have to be able to synthesize all that data together. We need the infrastructure and backbone in place to do that—a very tall order.”

While health IT infrastructure is critical to achieving the goal of truly patient-centric care, interviewees agreed that it is not enough. For HITECH's investment to yield transformative results, they suggested, fee-for-service payment systems and disaggregated, uncoordinated care must be replaced by organized systems of care that are reimbursed based on health outcomes.

National Coordinator for Health IT David Blumenthal recognized this in an April 2009 *New England Journal of Medicine* article, in which he stated that “Realizing the full potential of health IT depends in no small measure on changing the health care system's overall payment incentives so

that providers benefit from improving the quality and efficiency of the services they provide.”⁴⁹

According to Deven McGraw of the Center for Democracy and Technology, “In the health care advocacy community writ large, at least those of us who focus on the quality pieces in addition to access, we always thought health IT was one leg of a stool... that would include greater transparency, more public reporting, and payment reform.”

Historically, the health care system has rewarded volume rather than value of services.

This has created little or no demand for health IT tools, HIE, or care coordination and improvement. HITECH began to address this barrier by helping health care providers adopt health IT tools and by imposing payment penalties should they fail to do so. According to Dr. Mark Leavitt, retired Chairman of the Certification Commission for Health IT, that gets a provider only so far. HITECH, he said, is an “uncomfortable orphan”

when separated from true quality- and outcomes-based payment reform.

Indeed, the relationship between health IT and payment reform is a symbiotic one. The result of the combination of comprehensive payment reform and HITECH could be what the Center for American Progress describes as a “virtuous cycle,” in which the adoption and use of truly effective health IT enables care delivery improvements that are rewarded by value-based provider payment systems, which in turn provide strong, sustainable

financial incentives for the continued adoption and use of health IT.⁵⁰

The Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act—together the “Health Reform Package”—build on the investments of HITECH by promoting new care delivery and payment models, such as accountable care organizations, medical homes, and others, that could encourage health care providers to use health IT to coordinate and improve care.⁵¹

The Health Reform Package’s payment and delivery reform provisions, as well as its other health IT and quality improvement-related provisions, are a significant step in the right direction. However, they are targeted largely to Medicare and Medicaid. Interviewees agreed that comprehensive payment reform, coordinated among public and private insurers, is needed to give strong, consistent incentives to

providers and to yield greater improvements in care. For example, according to John Rother, Executive Vice President, AARP, physicians in small practices do not reap the benefits of health IT adoption because they are not part of an integrated system. “That’s the hard nut here: identifying the business case... that makes sense to the solo practitioner. Otherwise, I’m not sure that HITECH’s incentive payments will really be that helpful. That leads you back to payment reform. Until we change fee-for-service, HITECH will be insufficient to drive change alone.”

“We always thought health IT was one leg of a stool... that would include greater transparency, more public reporting, and payment reform.”

— DEVEN MCGRAW

Similarly, Kevin Kearns of Health Choice Network noted that “As long as the hospital’s financial health depends on how many surgeries are performed, for example, HITECH will not make as big a difference in health care as it could. We have to focus on primary care, providing a medical home for patients, and managing disease effectively... [B]ut most importantly, providers, including health centers and primary care physicians, have to be able to benefit from savings where they haven’t in the past.”

Other interviewees took up the same call. Helen Darling, President of the National Business Group on Health, said, “Even with more comprehensive health reform than what was passed, we would still have had to take our own steps to make change. Both the government and private payers have to do everything they can to tie change to reimbursement. That will be the only thing that motivates everyone.” And Dr. Amanda Parsons, Assistant Commissioner to the Primary Care Information Project, New York City Department of Health and Mental Hygiene, asserted that the role of private payers in payment reform is an integral one. Said Parsons, “Right now the private payer community is not as strategic about rewarding adoption and use of health IT, and the improvements in health outcomes that can result, as they need to be for us to achieve real improvements in the quality and efficiency of our health care system. Many don’t seem to hear the call to arms. We have to engage the collective private payer community in order to achieve our goals.”

“The ultimate measure of HITECH’s success will be if we create a health care system characterized by true integration – if we succeed in changing the organization of how we deliver care. The biggest flaw in today’s system is that we’re not all working together in the interest of the patient.”

– CAROL RAPHAEL

Conclusion

FEW DISAGREE THAT THE QUALITY AND EFFICIENCY OF THE U.S. HEALTH care system could be improved. The Agency for Healthcare Research and Quality, the nation’s lead federal agency for research on health care quality, costs, outcomes, and patient safety, has reported on the progress for improving health care quality each year since 2003, and according to last year’s report, “quality is improving, but the pace is slow.”⁵²

One of the primary purposes of HITECH is to help improve the quality and efficiency of health care. However, according to Carol Raphael, President and CEO of the Visiting Nurse Service of New York, “The ultimate measure of HITECH’s success will be if we create a health care system characterized by true integration – if we succeed in changing the organization of how we deliver care. The biggest flaw in today’s system is that we’re not all working together in the interest of the patient.”

While the efforts of the federal government, states, and other stakeholders to implement HITECH are worthy of high praise, there are course corrections that must be made to ensure that HITECH can meet the vision Raphael describes. These corrections must occur at both the legislative and regulatory levels, and the time to make them is now. Among the changes worthy of consideration are those designed to:

- ▶ Ensure that the requirements and timing of meaningful use better reflect the existing capabilities of health care providers;
- ▶ Develop a coherent federal strategy to create a truly interoperable nationwide health information network; and
- ▶ Expand eligibility for EHR incentives to all providers.

The nation is at the beginning of an exciting journey that could lead to the dramatic transformation of the health care delivery and payment system, anchored by new ways to exchange information to support better, more timely decision-making by providers and patients alike. Success will depend on the ability of everyone involved to learn from each other and to adapt and change policies and strategic direction to meet shared objectives.

Appendix A: Report Interviewees

Brent Antony, Chief Information Officer, Bureau of TennCare, State of Tennessee

Rachel Block, Deputy Commissioner, New York State Department of Health, Office of Health Information Technology Transformation

Pamela Brier, President and CEO, Maimonides Medical Center

David Cohen, M.D., Senior Vice President, Clinical Affairs, Senior Vice Chairman, Department of Medicine, Maimonides Medical Center

Janet M. Corrigan, Ph.D., M.B.A., President and Chief Executive Officer, National Quality Forum

Helen Darling, President, National Business Group on Health

Allen Dobson, M.D., Vice President, Carolinas Health Care System, President, Community Care of North Carolina, and President, Cabarrus Family Medicine

Toby Douglas, Chief Deputy Director, Health Care Programs, California Department of Health Care Services

James Figge, M.D., M.B.A., Medical Director, New York State Department of Health, Office of Health Insurance Programs

Jonah Frohlich, Deputy Secretary for Health IT, California Health & Human Services Agency

John Glaser, Ph.D., Vice President and Chief Information Officer, Partners HealthCare

Dave Goetz, Commissioner of Finance and Administration, State of Tennessee

Robert J. Henkel, F.A.C.H.E., President, Healthcare Operations and Chief Operating Officer, Ascension Health

Kevin Kearns, M.B.A., President and CEO, Health Choice Network

David Kibbe, M.D., M.B.A., Senior Advisor to the American Academy of Family Physicians

Michael Lardiere, Director of Health IT and Senior Advisor for Behavioral Health, National Association of Community Health Centers

Mark Leavitt, M.D., Ph.D., Chair (retiring), Certification Commission for Health IT

Deven McGraw, J.D., M.P.H, L.L.M., Director, Health Privacy Project, Center for Democracy & Technology

Susan Nestor Levy, Chief Advocacy Officer, Ascension Health

Amanda Parsons, M.D., M.B.A., Assistant Commissioner to the Primary Care Information Project, New York City Department of Health and Mental Hygiene

Carol Raphael, M.P.H., President and CEO, Visiting Nurse Service of New York

John Rother, Executive Vice President, Policy & Strategy, AARP

Bill Spooner, Senior Vice President and Chief Information Officer, SHARP HealthCare

Micky Tripathi, President and CEO, Massachusetts eHealth Collaborative

Appendix B: Glossary

American Recovery and Reinvestment Act of 2009

(ARRA): The \$787 billion economic stimulus package enacted in February 2010. Pub. L. No. 111-5 (2009).

Centers for Medicare and Medicaid Services (CMS): The federal agency within the United States Department of Health and Human Services that administers the Medicare program and works in partnership with state governments to administer Medicaid and the Children's Health Insurance Program (CHIP).

Certification Commission for Health IT (CCHIT): The federally recognized certification body for electronic health records that was originally established by the American Health Information Management Association, the Healthcare Information and Management Systems Society, and the National Alliance for Health Information Technology.

Certified Electronic Health Record and/or Electronic Health Record (EHR): An electronic record of health-related information on an individual that includes patient demographic and clinical health information, such as medical histories and problem lists, that has the capacity to provide clinical decision support; to support physician order entry; to capture and query information relevant to health care quality; and to exchange electronic health information with, and integrate such information from, other sources, as defined by HITECH.

Clinical Decision Support: Provides clinicians, patients or individuals with knowledge and person- or population-specific information, intelligently filtered or presented at appropriate times, to foster better health processes, better individual patient care, and better population health. Clinical decision support interventions include alerts, reminders, and order sets, as well as other techniques for knowledge delivery, including reference information and education (delivered with or without context sensitivity), health/clinical protocol and workflow

orchestration support, display of context-relevant data, topic-oriented documentation forms, and others.

Health Information Exchange (HIE): The electronic movement of health-related information among organizations according to nationally recognized standards.

Health Information Technology (Health IT): Hardware, software, integrated technologies or related licenses, intellectual property, upgrades, or packaged solutions sold as services that are designed for or support the use by health care entities or patients for the electronic creation, maintenance, access, or exchange of health information, as defined by HITECH.

Health Information Technology for Economic and Clinical Health Act (HITECH): The health information technology provisions included at Title XIII of Division A and Title IV of Division B of the ARRA.

Health IT Extension Program: The federal grant program to provide health IT implementation assistance to health care providers under HITECH.

Healthcare Information Technology Standards Panel (HITSP): A multi-stakeholder collaborative led by the American National Standards Institute and contracted by the Office of the National Coordinator for Health IT to harmonize relevant standards to enable and advance interoperability of health care applications and the exchange of health care data. HITSP was awarded a contract by the federal government in October 2005 to perform its work.

Interoperability: The ability of health information systems to work together within and across organizational boundaries in order to advance the effective delivery of health care for individuals and communities.

Meaningful EHR User: A health care provider that uses certified EHR technology in a manner consistent with criteria established by the federal government, including but not limited to electronic prescribing through an EHR (for eligible professionals), the electronic exchange of information for the purposes of quality improvement, and the submission of clinical quality and other measures to the U.S. Department of Health and Human Services.

Office of the National Coordinator for Health IT (ONC): The federal agency that serves as principal advisor to the Secretary of HHS on the development, application, and use of health IT, among other responsibilities. ONC was established within the Office of the Secretary of HHS in 2004 by Executive Order 13335.

Regional Extension Centers: Organizations that provide EHR adoption assistance to health care providers under HITECH's Health IT Extension Program pursuant to cooperative agreements with ONC.

State-Designated Entities (SDEs): Organizations designated by states as eligible to receive federal funding under HITECH's State HIE Cooperative Agreement Program.

State HIE Cooperative Agreement Program: The federal grant program to states to promote health IT under HITECH.

Statewide HIE Coalition: A coalition of states with advanced health information exchange plans or capacity that are working to build the infrastructure necessary for nationwide adoption and meaningful use of health IT.

Endnotes

1. By statute, “meaningful use” must include electronic prescribing through an EHR (for eligible professionals), the electronic exchange of information for the purpose of quality improvement, and the submission of clinical quality and other measures to the U.S. Department of Health and Human Services. CMS released a proposed rule setting forth detailed meaningful use criteria on January 13, 2010.
2. Medicare and Medicaid Programs: Electronic Health Record Incentive Program, 75 Fed. Reg. 1844-2011 (proposed January 13, 2010). See also the Continuing Extension Act of 2010, Pub. L. No. 111-157, 124 Stat. 116 (2010).
3. Medicare and Medicaid Programs: Electronic Health Record Incentive Program, 75 Fed. Reg. 1844-2011 (proposed January 13, 2010).
4. 42 U.S.C.A § 1396(b)(a)(3)(F)(ii). See also Rick Friedman and Jessica Khan. CMS Draft Guiding Principles for the Use of the 90/10 HITECH Administrative Funds & Implementation Issues, CMS Multi-State Collaborative HIT Conference, February 9, 2010.
5. In the recently-enacted health reform package, Congress took a first step toward extending the federal government’s support for health IT adoption to HITECH-excluded providers by including grants to long-term care facilities to adopt EHRs. See Pub. L. No. 111-148 § 6703 (2010). Pub. L. No. 111-152 (2010).
6. National Association of Community Health Centers. Comments on Medicare and Medicaid Programs: Electronic Health Record Incentive Program, 75 Fed. Reg. 1844-2011 (proposed January 13, 2010) submitted March 15, 2010.
7. 42 U.S.C.A. § 1396b(t)(2)(A).
8. 75 Fed. Reg. at 1930.
9. AHA. Comments on Medicare and Medicaid Programs: Electronic Health Record Incentive Program, 75 Fed. Reg. 1844-2011 (proposed January 13, 2010) submitted March 8, 2010.
10. Vermont’s Blueprint for Health is a coordinated statewide health reform initiative featuring three community pilots programs in which health care providers receive incentive payments for serving as patient centered medical homes supported by community health teams. These pilot programs are undergirded by a statewide health IT infrastructure that supports evidence-based care, population reporting, and health information exchange. Vermont Blueprint for Health. Smart Choice. Powerful Tools. 2009 Annual Report. Vermont Department of Health. January 2010.
11. Vermont Blueprint for Health. Smart Choice. Powerful Tools. 2009 Annual Report. Vermont Department of Health. January 2010.
12. AHA, www.aha.org/aha/resource-center/Statistics-and-Studies/fast-facts.html (last visited April 13, 2010).
13. 75 Fed. Reg. at 1852.
14. Id.
15. 42 U.S.C.A. § 300jj-11(b)(10).
16. Email from David Blumenthal, ONC, to ONC list-serv, The HITECH Foundation for Health Information Exchange (November 12, 2009).
17. 75 Fed. Reg. at 1932, 1933, 1934.
18. Email from David Blumenthal, ONC, to ONC list-serv, There Is No ‘One-Size-Fits-All’ in Building a Nationwide Health Information Network (May 14, 2010).
19. Id.
20. Id.

21. The Statewide HIE Coalition's comments are described in an April 8, 2010 Health Data Management article. State HIEs Weigh in on MU Rule. Health Data Management, April 8, 2010, www.healthdatamanagement.com.
22. 42 U.S.C.A. § 300jj-11(b)(4).
23. American Medical Informatics Association, "A Roadmap for National Action on Clinical Decision Support," June 13, 2006.
24. "Challenges and Barriers to Clinical Decision Support (CDS) Design and Implementation Experience in the Agency for Healthcare Research and Quality CDS Demonstrations." Agency for Healthcare Research and Quality National Resource Center for Health Information Technology. AHRQ Publication No. 10-0064-EF. March 2010.
25. 75 Fed. Reg. at 1863.
26. David W. Bates and Asaf Bitton. "The Future of Health Information Technology in the Patient-Centered Medical Home," 29.4 *Health Affairs*. 614-621 (2010).
27. While not mandated by statute, this decision was influenced by HITECH provisions directing CMS to avoid duplicative requirements for meaningful use from federal and state governments. 42 U.S.C.A. § 1395w-4(o)(1)(D)(iii); 42 U.S.C.A. § 1396b(t)(8).
28. 75 Fed. Reg. at 1851, 1852.
29. 75 Fed. Reg. at 1943.
30. H. 627, 2009-2010 Leg. Sess. (Vt. 2010).
31. 42 U.S.C.A. § 1396b(t)(8); 75 Fed. Reg. 1852.
32. 42 U.S.C.A. §§ 1396b(t)(3)(B)(i)-(v); 42 U.S.C.A. §§ 1396b(t)(2)(B)(i)-(ii).
33. 42 U.S.C.A. § 1395w-4(o)(5)(c); 42 U.S.C.A. § 1395ww(n)(6)(B).
34. HITECH Extension for Behavioral Health Services Act of 2010, H.R. 5025, 111th Cong. (2010).
35. Pub. L. No. 111-148 § 6703 (2010). Pub. L. No. 111-152 (2010).
36. 42 U.S.C.A. § 1395w-4(o)(1)(C)(ii); 42 U.S.C.A. §§ 1396b(t)(3)(D). The only exception to this rule is that Medicaid eligible professionals practicing predominantly in a federally qualified health center or rural health clinic are not subject to the hospital-based exclusion. 42 U.S.C.A. § 1396b(t)(2)(A)(iii).
37. 75 Fed. Reg. at 1985.
38. Medicare and Medicaid Programs: Electronic Health Record Incentive Program, 75 Fed. Reg. 1844-2011 (proposed January 13, 2010). Manatt Health Solutions analysis of information reported in Tables 36, 37, 39, 40, 45, and 46.
39. Hing E, Hall MJ, Xu J. National Hospital Ambulatory Medical Care Survey: 2006 Outpatient Department Summary. National Health Statistics Reports; No 4. Hyattsville, MD: National Center for Health Statistics. 2008.
40. Continuing Extension Act of 2010, Pub. L. No. 111-157, 124 Stat. 116 (2010).
41. 42 U.S.C.A. § 300jj-32.
42. Each cooperative agreement under the Health IT Extension Program will consist of a four-year project period with two separate two-year budget periods. Non-competing continuations for the second two-year budget period will be contingent upon performance and a determination by HHS that continuation by a Regional Extension Center is in the best interest of the program.
43. Health Information Technology Extension Program: Regional Centers Cooperative Agreement Program Funding Opportunity Announcement and Grant Application Instructions. Office of the National Coordinator for Health Information Technology, Department of Health and Human Services. 2009.

44. Phyllis Torda, Esther S. Han, and Sarah Hudson Scholle. "Easing the Adoption and Use of Electronic Health Records In Small Practices," 29.4 *Health Affairs*, 669–675 (2010).
45. 42 U.S.C.A. § 300jj-32(c)(5).
46. Health Information Technology Extension Program: Regional Centers Cooperative Agreement Program Funding Opportunity Announcement and Grant Application Instructions. Office of the National Coordinator for Health Information Technology, Department of Health and Human Services. 2009
47. By statute, RECs must prioritize their assistance to public, not for profit, or critical access hospitals, FQHCs, entities in rural or other areas that serve the uninsured, underinsured, and medically underserved individuals, and individual or small group practices (or consortia thereof) focused on primary care. 42 U.S.C.A. § 300jj-32(c)(4)(A)–(D).
48. Among other things, HITECH requires the Secretary of the U.S. Department of Health and Human Services, in consultation with the Director of the National Science Foundation, to provide assistance to higher-education institutions to expand or establish medical health informatics education programs, including certification, undergraduate, and master's degree programs. The types of activities eligible for support include developing and revising curricula, recruiting and retaining students, acquiring instructional equipment, and establishing or enhancing bridge programs between community colleges and universities. Priority funding will be given to existing programs and those that can be completed in six months. On April 2, 2010, ONC announced \$84 million in support through cooperative agreements to 16 universities and junior colleges to support training and development of more than 50,000 new health IT professionals. ONC has reportedly set aside a total of \$120 million for health IT workforce development. See Press Release. U.S. Department of Health and Human Services, HHS Awards \$144 Million in Recovery Act Funds to Institutions of Higher Education and Research to Address Critical Needs for the Widespread Adoption and Meaningful Use of Health IT (April 2, 2010). See also "Selected Health Funding in the American Recovery and Reinvestment Act of 2009," Congressional Research Service. March 17, 2010. Report Number R40181.
49. David Blumenthal, "Stimulating the Adoption of Health Information Technology." 360 *New England Journal of Medicine*, 1477–1479 (2009).
50. Todd Park and Peter Basch, *A Historic Opportunity: Wedding Health Information Technology to Care Delivery Innovation and Provider Payment Reform*, Center for American Progress. May 2009.
51. Pub. L. No. 111–148 (2010). Pub. L. No. 111–152 (2010).
52. Agency for Healthcare Research and Quality. U.S. Department of Health and Human Services. National Health Care Quality Report 2009. AHRQ Publication No. 10-0003 (March 2010).

manatt

Manatt Health Solutions
7 Times Square
New York, NY 10036
phone: 212.790.4639
fax: 212.536.1879
www.manatt.com