

# Regional Extension Centers

Advancing Health Information Technology  
Adoption and Meaningful Use

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**NYC REACH**

*Regional Electronic Adoption Center for Health*



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# Introduction

Promoting universal adoption of electronic health records (EHRs) has been a federal objective since President Bush established the Office of the National Coordinator for Health Information Technology (ONC) in 2004. Health policy analysts and health executives concluded long ago that efforts to improve the efficiency and impact of health care will demand a health IT infrastructure. The passage of the American Recovery and Reinvestment Act of 2009 (ARRA) created the first national program to directly reward EHR adoption and use. ARRA committed over \$30 billion to physician incentives dependent upon achieving the criteria that have rapidly been defined as "Meaningful Use Criteria," fulfilling a pledge made by President Barack Obama during his campaign for the Presidency.

The authors of ARRA recognized that the small private practices delivering 75 percent of ambulatory care in the United States would require significant technical assistance to achieve the Meaningful Use Criteria.<sup>1</sup> To help overcome these barriers and drive

coordination of the emergent Health IT infrastructure, ARRA created separate federal funding to create 60 Health IT Regional Extension Centers (RECs) across the country, drawing on the success of community EHR adoption projects such as the Primary Care Information Project (PCIP) at the New York City Department of Health and Mental Hygiene as a model.

The PCIP is an initiative of the New York City Department of Health and Mental Hygiene, charged with improving the health of New Yorkers through health information technology, with a special focus on medically underserved areas. Since launching in 2005, PCIP has grown into the nation's largest electronic health record (EHR) extension project. With public funding, PCIP established a contract with a commercial EHR vendor, working closely with their staff to develop the architecture for integrated registry functions, point of care decision supports for providers, and automated quality measurement.

These tools help enable even the single doctor practices in the program to run population health management programs focused on smoking cessation and preventing heart attacks and strokes.

Through PCIP, over 2,000 providers who serve Medicaid, patients and the uninsured now use an EHR. After implementation, PCIP provides on-site consulting to establish clinical workflows that leverage the EHR to improve measured health outcomes. This network of engaged practices works with PCIP to pioneer initiatives that leverage the power of technology to accomplish public health goals, with a focus on prevention, continuity of care, and cost reduction. The impact of these efforts is captured by automated, aggregated quality reporting from each practice to the Department of Health. PCIP and the Fund for Public Health were selected by the ONC to run NYC REACH, the Regional Extension Center for New York City.

<sup>1</sup> HealthNewsDigest.com—For Small-Practice Physicians, HIT Benefits Now Are Within Reach

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This paper provides lessons learned from the PCIP initiative and gives an overview of future plans for NYC REACH, along with insights from Accenture's EHR implementation and provider adoption experiences, to guide other RECs nationally as they launch. PCIP achieved high levels of meaningful adoption at small practices through five major initiatives:

1. Broadcasting expectations to vendors
2. Investing resources in outreach and communications to providers
3. Creating accountability for vendors through close project management of the implementation process for PCIP, helping ensure that implementation drives measurable improvement in public health outcomes
4. Establishing multiple revenue sources, including contributions from providers and health plans
5. Linking EHR adoption to measurable public health and health care system goals

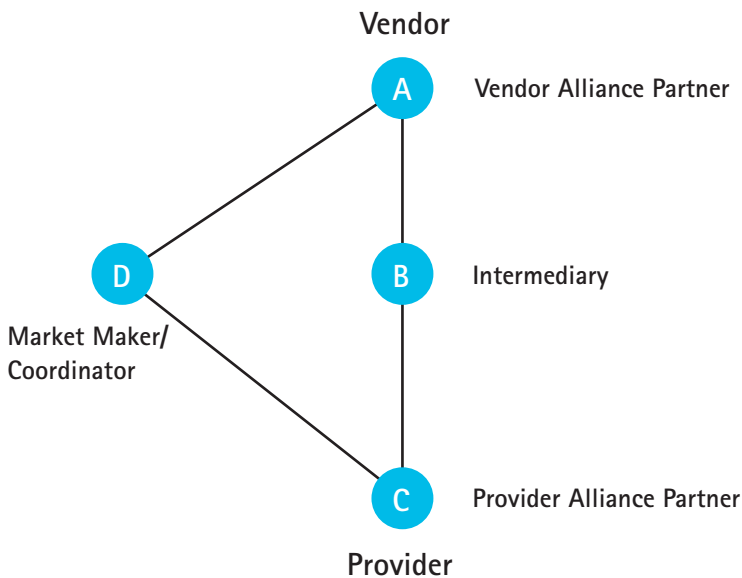
### Types of RECs

After ONC awarded funding in early 2010, an initial meeting was convened with the REC awardees and the new national Health Information Technology Research Center (HITRC) team. During the meeting, PCIP participated in discussions about the different "types of RECs." These types reflect the different business models, originating organizations and missions of the REC awardees, and provide the RECs some general classification to bring RECs with similar models together to help compare practices on outreach, services, contracting, vendor EHR implementation and sustainability models. NYC Reach identifies most closely with the Type "B" and Type "C" models. In this paper, we may differentiate recommendations that fit a particular type of REC model.

We will discuss several of the most common challenges which the different types of RECs may likely face in the coming year, and provide lessons learned and insights where appropriate:

- Community Provider Engagement
- Vendor EHR System Selection
- Supporting Tools for the REC
- Sustainability
- Life after Meaningful Use

Figure 1. ONC 'Types' of Regional Extension Centers



# Community Provider Engagement and Adoption

As a pioneer in the area of provider adoption of electronic health records and now the Regional Extension Center for New York City (NYC REACH), PCIP's experience serves as a valuable case study.

PCIP began its efforts with an outreach team of three that has now grown to five full-time resources. In the first phase of its outreach efforts in alignment with its public health mission, PCIP made 200 site visits to some of the most medically underserved areas in New York City. From there, the team took a diverse approach to reach the greatest number of practices possible, including sending mailings and attending monthly meetings of doctors' groups. This approach was successful in recruiting early adopters. The team recruited about 700 providers very quickly but found it was not attracting all the targeted providers serving the

neediest patients. Although there were positive results from early adopters, the team also encountered a fair amount of skepticism among providers regarding the benefits of using an EHR.

To help attract their targeted providers, PCIP realized the need to devote more personal attention to each practice. They found it took as many as 22 contacts to help persuade a single provider to join the PCIP program. The most significant barrier was the high up-front costs associated with implementing a fully integrated EHR. Despite attempts to help reduce the financial burden on providers, including offering free software licenses, many were still unable to offset the initial costs of EHR adoption. With high patient volume and low reimbursement rates, the targeted practices were financially strapped. To further help these practices, PCIP secured private sector funding to supply hardware for 100 providers and to subsidize up-front costs.

One year into its provider adoption efforts, PCIP had established a solid foundation but continued to be challenged to find a more efficient model for persuading providers to implement and use EHRs. The team realized it should shift its focus to identify ways of reducing the amount of time spent per practice. As part of the renewed strategy, PCIP now holds monthly open houses. Sixty to 100 providers attend the open house each month. The open houses actually have not reduced the time spent on outreach, but they do help increase the "yield" and better prepare providers for the implementation process. Further, the open house format supports a more robust learning experience. Providers benefit from the collaborative nature of the open house. They are able to hear answers to questions they may not have considered and can share common concerns as well as possible solutions.

The Outreach Team at PCIP has observed that Health Information Technology for Economic and Clinical Health (HITECH) incentives and Meaningful Use have only had a marginal impact on provider interest and intent to implement. There is significant progress to be made by RECs to educate providers on the details of the financial incentives and Meaningful Use.

The PCIP intake process for new providers now involves six steps:

**Step One—Phone Evaluation:** The provider participates in a 10-minute evaluation conducted by phone. A PCIP team member determines the provider's eligibility and describes the EHR process and the benefits to the practice.

**Step Two—System Demo:** The provider views a webinar that demonstrates the EHR system. About 50 percent of the practices that complete step one also complete step two.

**Step Three—Detailed Readiness Assessment:** The third step is a readiness assessment. Interested practices complete a nine-page application. Currently, about 40 percent of practices submit applications online, with the remainder submitting by paper. The application includes questions aimed at understanding the provider's organization structure, staffing, patient demographics and IT information as well as the provider's goals.

**Step Four—IT Assessment:** The provider completes a mandatory IT assessment to review the hardware specifications for the program. Earlier in PCIP evolution, the IT assessment was a one-hour phone call. In another effort to serve a greater number of providers more efficiently, the outreach team now conducts assessment education and guidance via conference call, allowing PCIP to conduct assessments with four to 10 practices at once.

- **Step Five—Financial Planning:** The Outreach Team provides a detailed and customized cost sheet to each provider, outlining the up-front and ongoing costs involved with joining the program.

- **Step Six—Contract Signing:** The provider currently signs contracts with both NYC REACH and the EHR vendor.

PCIP approves about 95 percent of applications. Sixty percent of approved applicants move generally forward to install an EHR system. As you can see from the steps above, PCIP found it important to have a streamlined process to gather current IT infrastructure capabilities prior to moving to contract execution. Similarly,

it is important to understand adoption challenges in order to better assign the correct amount of implementation support resources to each provider.

The key lesson here is outreach, outreach, outreach. The PCIP team realizes that any dollar of funding must be prioritized first on outreach and heavy involvement with providers to educate, build awareness and to bring them into this program—or there is no program. With respect to priority of funds, PCIP ranks outreach as the first priority and funding focus, post-implementation support to quality objectives as second, and implementation of the EHR as tertiary.

# Common Challenges in Provider Adoption and How PCIP Addressed Those Challenges

PCIP's provider outreach efforts over the past several years have uncovered several significant challenges. We present them here on a high level along with proposed solutions.

## Expense

Not surprisingly for small practices—particularly those dealing with underserved populations—cost is a major concern at every point in the process. PCIP found initially that financial concerns are so great that it often could not give EHR systems away for free. Because financial concerns often deter many practices from moving ahead, PCIP provides a financial consultation at the same time it conducts the IT consultation. The outreach team makes a point of highlighting to providers the benefits of participating, particularly now that Meaningful Use funding is available. The team also refers practices to New York City's Department of Small Business Services, which can help with financing options. It is useful to remember that many providers are small businesses and may be able to take advantage of government programs to help small businesses with growth, training and job creation.

## Technology

Provider practices often have limited familiarity with technology. For example, when PCIP started, it required applications to be submitted via e-mail. It soon discovered that a number of practices did not know how to attach documents to an e-mail message. A lack of familiarity with technology presents challenges

in teaching a practice how to better use a new system. In addition—and more importantly—it also presents process challenges. Practices unfamiliar with technology do not know how to incorporate a system into their established routines. They need training in process as well as in system usage. This includes guidance as simple as where to place a terminal or printer as well as when and how to use the new system as part of the treatment process.

There are several steps that can be taken to better understand a provider's technology proficiency and provide the appropriate level of support so the clinic will use the EHR effectively:

- Include an IT assessment as part of the REC provider intake process. The assessment should include a checklist of hardware and software needs and specific directions for identifying and procuring necessary equipment.
- Recommend that providers hire independent IT consultants to help support the implementation process (Note: Depending on the "type" of REC mentioned in this paper, the REC may or may not offer additional options for on-site implementation services).
- Build vendor support into REC outreach efforts. An REC outreach team should include one full-time resource from each system vendor.
- Pay attention to the process as well as the system. Give providers directions on how to better incorporate the system

into their routines. This includes specific instructions such as where to place a printer in an office.

- Include an end user technology skills assessment that informs the change enablement process.

## Communication

Communication plays a critical role in reaching potential REC participants, convincing them to join an REC, and in supporting them through the process. To manage the communications process from onset to contract signing, it is generally helpful to use a customer relationship management tool such as Salesforce.com.

- Maintaining strong marketing material. PCIP's outreach staff uses concise "one-pager" documents to hand out at events following presentations. This document lays out what is required of the practice in terms of time and financial commitment and what PCIP supplied in return. Rather than discussing the big picture of improved health quality and the national Meaningful Use program, the one-pager provides concrete details that likely apply directly to small practices. Providers can then look to the program's website, newsletter, and more in-depth materials on various programs for more details.

- Identifying practices. The first outreach step entails obtaining lists of targeted physicians/physician practices. This can be achieved by working with medical associations and health plans of all types. They can provide contact lists and offer speaking spots at regular meetings of members.

- Obtain local hospital provider support. The advent of HITECH incentives and Meaningful Use, relaxation of Stark laws<sup>2</sup> allowing 85 percent of EHR implementation costs to be covered by hospitals, and introduction of accountable care organizations (ACOs) have brought focus from hospitals reaching out to equip their affiliated and independent physician practices with integrated ambulatory EHRs. PCIP has found that several of the NYC-based hospitals are amenable to consider the NYC REACH program as a teaming partner and viable channel for their physicians, versus running a full program themselves with an opposing solution.

- Reaching providers. E-mail blast messages are an essential way of continually updating engaged providers. However, PCIP blast e-mails have an average open rate of only 20 percent. Each REC will likely be challenged to learn about the communication preferences of its network of providers and tailor the communication strategy accordingly. At PCIP, fax blasts also work very well, because many small providers still use faxes regularly. Presenting at association meetings is another way of reaching large numbers of providers. Once initial contact has been made with a provider, try to get a doctor's cell phone number. Reaching providers by phone can be very challenging. Office managers often act as gatekeepers. A cell phone number makes it easier to reach a doctor directly and also signals that the doctor is engaged in the process.

- Persuading practices to join an REC. During initial outreach efforts, an REC should address fundamental questions of what an REC is, why it is worthwhile for a practice to join an REC, and why it is preferable to join an REC versus signing up directly with a vendor.

### Scalability

To help an REC succeed at its mission, it should enroll a large number of providers. It needs to be able to reach and engage providers on a large scale and in a cost-effective manner. There are several successful examples around the country of provider adoption. Most of these, however, are labor-intensive. A model that requires significant individual attention for a single provider will likely not work for an REC. The underlying provider adoption challenge for an REC should be to address the other challenges listed above at scale, and determine what services the REC will be able to provide within their budget—to identify and reach large numbers of providers, train them on new systems and processes, and help them identify financing options. There are several ways this can be achieved, and possible options include:

- Centrally hosted events. An easy way to offer in-person advice to a larger number of physicians is to hold or attend events open to multiple providers. PCIP, for example, holds monthly open house events where providers can come and learn about services, ask questions about Meaningful Use, hear from a provider currently using an EHR, meet with individual REACH team members, and network with each other. Presentations can be made at meetings held by partner organizations such as medical societies, hospitals and physicians' associations.

- Virtual training. Both system and process training can be delivered electronically. For system training, simulated training demonstrations can show providers how to use the system and give them a chance to practice scenarios. For process training, instructional videos that can be shown on a variety of media such as DVDs and YouTube answer commonly asked questions and demonstrate what forms need to be completed, how to use an EHR feature, or the elements of one of the Meaningful Use criteria. This significantly reduces time spent in the office or on the phone answering questions. At the PCIP office, staff members offer billing classes, advanced EHR training, and patient-centered medical home instruction, and reach many more providers in much less time.

- Specially-trained, lower-cost workforces. No matter how successful these approaches are, some on-site assistance will likely always be required. Deploying a specially-trained, lower-cost workforce can reduce the cost of providing on-site assistance. ONC has provided funding grants for Health IT workforce training to many community colleges in the country that can assist in this area. As an example that has received significant excitement by providers, NYC REACH will work with local community colleges and universities who receive this funding to help develop practical curricula and place students in doctor's offices as interns to assist in the implementation and post-implementation process.

<sup>2</sup> Physician Self-Referral Law (Stark Law), 2006

# EHR System Selection

Each REC has the critical responsibility of providing and supporting a selection of vendor EHRs and EHR components that will be price-competitive and flexible to meet the needs of the diverse provider market in their regions. Depending on the REC's type and mission, an REC may choose to offer and support just a few EHR vendor platforms; others may choose to provide broader, high-level support and group purchasing across a wider array of vendor platforms. The key requirements for these vendors are generally outlined by HITECH—and the Department of Health and Human Services and Centers for Medicare and Medicaid Services (CMS) anticipate publishing the final rule in the middle of 2010, codifying the rules and regulations for implementing EHR. Due to the fluid environment stemming from the rules for certification and Meaningful Use not yet finalized, it is important to select a vendor partner who demonstrates adaptability, scalability, and connectivity solutions (data exchanges), and anticipates change and strong solution planning to drive REC success. Additionally, as RECs will need to identify preferred vendors prior to Meaningful Use certifications, they should review carefully each Meaningful Use criteria with the vendors they identify as "preferred."

This is a challenging time for EHR vendors; there is a massive need for deployment support from EHR vendors that are also busy with ongoing certification processes and product development necessary to adhere to the new interoperability standards for the National Health Information Network (NHIN) that have not yet been finalized. Physician adoption of EMR over the next two years is well delineated, but purchasing patterns show variation on whether EHR platform consolidation (five key vendors) or expansion (many entering the market at lower costs) is the case.

Accenture's Innovation Center for Health and Institute for Health and Public Service Value worked with Harris Interactive to survey 1,000 US physicians from practices of fewer than 10 practitioners to measure their views of EMRs. The survey's primary objective was to determine concerns and perceptions of EMRs and gauge motivating factors at a time when US federal legislation includes incentives for physicians who implement and use EMRs and penalties for those who do not adopt EMRs by 2015. The New York Academy of Medicine assisted with the qualitative survey and analysis.

Among the key findings:

- Almost 60 percent of nonusers intend to purchase an EMR system within the next two years.
- 80 percent of physicians under 55 years of age and all those from group practices have plans to adopt an EMR within the next two years.
- Physicians from solo practices and those over 55 years of age are less likely to adopt EMR systems.
- Three-quarters of physicians are attracted by the idea of sharing EMR systems with a hospital or health network if the systems are at least partly subsidized by the hospital.

The notice of public rulemaking with a request for comments to adopt an initial set of standards, implementation specifications, and certification criteria, as required by the Public Health Service Act (Sect 3004(b)(1)), closed March 15, 2010. The interim final rule represents the first step in

an incremental approach to adopting standards, implementation specifications, and certification criteria to enhance the interoperability, functionality, utility, and security of health information technology and support its Meaningful Use. The certification criteria establishes the capabilities and related standards that EHR technology will need to include in order to, at a minimum, support the achievement of the proposed Meaningful Use Stage 1 by eligible professionals (beginning in 2011) under CMS' EHR incentive program.

The sequence of activities to achieve "Meaningful Use" are clear with one exception, the availability of a qualified EHR certification organization or agency. On March 10, 2010, the Department of Health and Human Services issued a notice of Proposed Establishment of Certification Programs for Health Information Technology. Under the authority granted, the National Coordinator proposes the establishment of two certification programs for purposes of testing and certifying health information technology. While two certification programs are described in this proposed rule, we anticipate that separate final rules for each of the programs will be issued.<sup>3</sup>

<sup>3</sup> Department of Health and Human Services—45 CFR Part 170 Proposed Establishment of Certification Programs for Health Information Technology; Proposed Rule <http://edocket.access.gpo.gov/2010/pdf/2010-4991.pdf>

The first proposal would likely establish a temporary certification program whereby the National Coordinator will authorize organizations to test and certify Complete EHRs and/or EHR Modules, thereby assuring the availability of Certified EHR Technology prior to the date on which health care providers seeking the incentive payments available under the Medicare and Medicaid EHR Incentives Program may begin demonstrating Meaningful Use of Certified EHR Technology. The second proposal would establish a permanent certification program to replace the temporary certification program. The permanent certification program would separate the responsibilities for performing testing and certification, introduce accreditation requirements, establish requirements for certification bodies authorized by the National Coordinator related to the surveillance of Certified EHR Technology, and will include the potential for certification bodies authorized by the National Coordinator to certify other types of health information technology besides Complete EHRs and EHR Modules.

Certification of health information generally exists in many areas of health care delivery. Standards and recognized organizations will be established; however, the timing is tenuous. A key consideration during the REC's EHR vendor selection process should be the vendor's ability to "understand and speak" to validation of their infrastructure, application performance and data integrity in a dynamic environment. At a minimum, vendors should align product and services to meet or exceed the federal requirements for certification and ultimately Meaningful Use.

## Interim Measures

The Certification Commission for Health Information Technology (CCHIT) has unveiled three certification approaches to replace the current single one.

- A rigorous certification for comprehensive EHR systems that significantly exceed minimum federal standards requirements. This certification (EHR-C) would be targeted to the needs of providers who want maximal assurance of EHR capabilities and compliance.
- A new, modular certification program for electronic prescribing, personal health records, registries, and other technologies. Focusing on basic compliance with federal standards and security, the EHR-M program will be offered at lower cost, and could accommodate a wide variety of specialties, settings and technologies. It should appeal to providers who prefer to combine technologies from multiple certified sources.
- A simplified, low-cost site-level certification. This program will better enable providers who self-develop or assemble EHRs from noncertified sources to also qualify for the ARRA incentives.<sup>4</sup>

Meaningful Use is the foundation for EHR implementation and a physician's eligibility requirements for federal funding. A vendor's ability to implement and support the Meaningful Use requirements will likely be key, to better enable EHR certification.

<sup>4</sup> CCHIT—IFR Stage 1 Certification Programs Open.  
<http://www.cchit.org/media/enews>

However, it is important to realize that the current EHR vendor software releases likely will not support the functionality required to meet Meaningful Use out of the box. Therefore, RECs should ensure they select vendors that will work together in a collaborative fashion to help meet Meaningful Use criteria. For example, providers may document care in an electronic medical record that then transmits data to an HIE. If the HIE then passes information electronically to the public health department to meet reporting requirements, providers should be able to leverage the entire "solution" to help meet Meaningful Use criteria as long as relevant portions of the technology are certified when required.

## System Architecture and Design

System architecture and design will be expected to support multiple points of connectivity through a variety of interfaces capable of supporting CPOE, diagnostic test result reporting, treatment and care plans, and surveillance reporting to public agencies and payers. As Accenture has experienced, operating secure networks, transmitting protected health information and maintaining secure access are tricky. Data standards capable of supporting Meaningful Use have not been agreed upon, so vendors will likely be expected to demonstrate interface network and virtual network designs including failover and recovery capabilities as defined by end users.

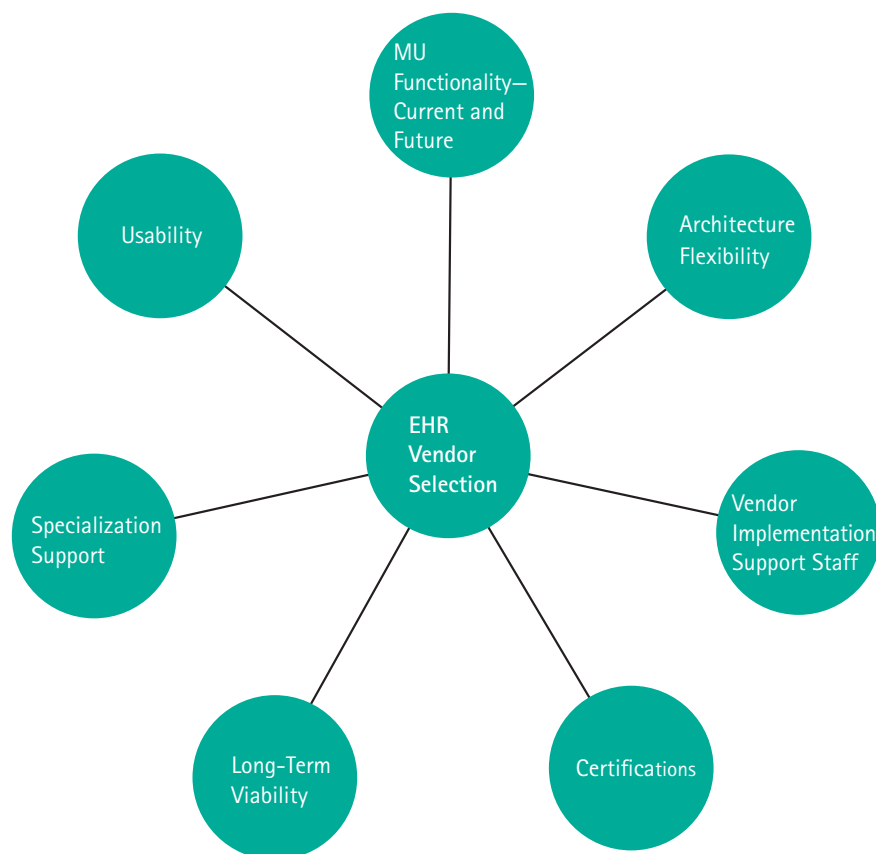
Other vendor selection considerations should be whether a vendor shows appropriate flexibility to help accommodate the evolving NHIN and NHIN Direct interoperability standards (allowing "push" messaging of referrals

and results to/from the EHR to other vendor EHRs), and whether the vendor provides any "modular EHR components" at better costs as specified in the ONC Meaningful Use documentation. Yes, vendors would like to sell full package EHR implementations, but what makes the best sense for that provider's practice? Greater adoption success might look like a phased approach to implementation and decisively building out their digital ecosystem rather than attempting a single rollout. The REC must determine what implementation options they can provide within a basic, low-cost package versus additional services to accommodate extended deployments and additional phased capabilities. Physicians have to do what is realistic and still provide quality care to their patients. Physicians trained in CPOE as a requirement of their hospital credentialing may consider this as the first module they implement. The next module to consider could be eRX followed by EHR.

Remember that the exchange of data creates a digital ecosystem where it is only as strong as the weakest link. If providers are going to exchange clinical information with other providers and entities in the health care data chain, they have to have confidence in the Health Information Exchange and the other entities' ability to help protect that data. Loss of confidence in the confidentiality, integrity or availability of the data at any point in the chain could pose concerns with an EHR system, and it is critical that the REC prioritizes EHR vendor security capabilities to ensure reliability and stability.

Figure 2 highlights key evaluation factors each provider should consider when selecting an EHR solution.

Figure 2. EHR Vendor Selection



## Practice and Workflow Redesign

RECs should provide support for practice and workflow redesigns which may be necessary to help achieve a sustainable, stable ecosystem. Operationalize the EHR based on current patient and physician needs. Vendors packaging their products to align with practice types such as cardiology, orthopedics, internal medicine and obstetrics could provide a one-stop shop, helping minimize the complications if you were to select vendors using the "best in breed" or "à la carte" concept for eRX, CPOE and EHR. Screen vendors who will provide products and services that help meet your practice needs plus 15 percent. Bells and whistles are great but buyer beware, focus on your needs vs. the needs of the vendor. Scalability, functionality, ease of use and positioning for a new platform for interoperability, including the following, will be key to your success:

- Documentation of essential clinical information in a structured format
- Electronic administrative transactions
- Electronic prescribing
- Electronic laboratory ordering and resulting (there is industry concern laboratory data will present challenges and possibly lag other modules being installed)
- Sharing key clinical data across practice settings
- Providing patients with access to their health information
- Public health reporting
- Policies and practices that help maintain the privacy and security of personal health information

Vendors should be expected to provide technical specifications and justification for their recommended terminology standards utilized if they do not follow the national standards (examples: HL7 v2-3, export/import via CCD/CCR, SNOMED, LOINC coding, IDC9->IDC10 flexibility).

## Functional Requirements

Key functional requirements identified for EHR address improving patient safety, supporting the delivery of effective patient care, facilitating the management of chronic conditions, improving efficiency, and increasing the feasibility of implementation. From a perspective of the REC, the functional requirements can be viewed as business requirements addressing Meaningful Use.

Figure 3 provides a short list of the current functional requirements. The complete list is referenced in the appendix.

Figure 3. Key EHR Functional Requirements

### Stage 1 Objectives

Use of CPOE

Implement drug-drug allergy

Maintain an up-to-date problem list of current and active diagnoses based on ICD9/10 CM or SNOMED CT

Generate and transmit permissible prescriptions electronically, i.e., eRx

Implement drug-drug, drug-allergy, drug-formulary checks

Record and chart vital signs

Report quality measures to CMS or states

Send reminders to patients per patient preference for preventive care/follow-up care

Implement five (5) clinical decision support rules

Maintain active medication allergy list

## Interoperability Requirements

Vendors will focus on addressing the functional interoperability needs of practices, including, but not limited to the following, to comply with the Stage 1 Objective by EOY 2011. These requirements help address the electronic exchange of administrative transactions; laboratory orders and results; medication prescriptions; quality and public health reports; and patient summaries.

## Implementation and Project Management

Vendors should provide end-to-end project management support during the EHR implementation process, including individualized and on-site coaching, consultation and troubleshooting, and other activities which might be required to help the supported provider:

- Assess and enhance organizational readiness for health IT

- Assess and remediate gaps in IT infrastructure
- Configure the software to address practice needs and enable Meaningful Use
- Ensure adequate software training for all staff
- Track and adhere to implementation timelines

## Maintenance and Support

There will be many vendors competing to be on the REC "list" for the short-term relationship with providers, but what are the long-term implications? The challenge will be selecting long-term partners and relationships that will help maintain and support the new system for the next three to five years. Some of the points RECs and providers should consider are:

- Hardware—swap out replacement within an agreed time
- Software—performance standards, updates and upgrades

- Connectivity—consideration for redundancy in the case of failure
- Data integrity management
- Network security
- User-based access controls
- Disaster recovery
- Recommended down-time procedures in the event of system failure (paper clinical documentation)
- Encryption and storage of backup media
- Maintenance of privacy and security best practices
- Responsibility for policies and procedures defining the purpose and use of systems to include training protocols
- Responsibility for identification and changes to state and federal law and regulatory requirements that impact privacy and security policies for electronic interoperable health information exchange
- Who will be responsible for third-party applications?

# Supporting Tools for the REC

As discussed, Regional Extension Centers nationally should create scalable internal solutions to help support the varied challenges they will face in the years to come. While most RECs will likely find selecting vendors to be very time-consuming, we have also found that creating implementation/change management methodologies and tools can be equally time-consuming.

We define a methodology as a repeatable, common approach to accomplishing a particular goal or achieving an outcome. Central to a scalable methodology are tools that REC team members can use to perform a particular task. For example, RECs will need to develop a clinician adoption methodology. Part of the methodology should include a staging approach, i.e., helping staff identify where the provider is on the adoption curve. If the REC would like

to help ensure that providers are staged in a repeatable manner, the REC should develop a staging tool. This may take the form of a survey instrument, spreadsheet, set of standard interview questions with scoring, or other mechanism such as an online tool. Most important is that each of the tools should link together in such a way that the output of one tool becomes the input of the next tool in the methodology. Using an established methodology with supporting tools may help staff meet timelines and help confirm they are all performing tasks in a similar manner across thousands of providers simultaneously.

Creating a methodology and supporting tools requires diligent up-front planning and mobilization. We anticipate that RECs will likely need to create tools to

support methodologies and tasks such as those listed in Figure 4. While the list is not comprehensive, it is important to note that many are tools an REC needs to address the "human" side of the implementation, not just the IT components. Later phases are concern areas for the future that will likely require additional methodologies and tools as the REC progresses over time.

In addition, the Health Information Technology Research Center (HITRC) is developing an initial set of CRM tools for the RECs to utilize nationwide both internally and for reporting to ONC, based on the Salesforce.com platform. Information, logins and training are available after REC awards are made.

Figure 4. REC Support Tool Categories

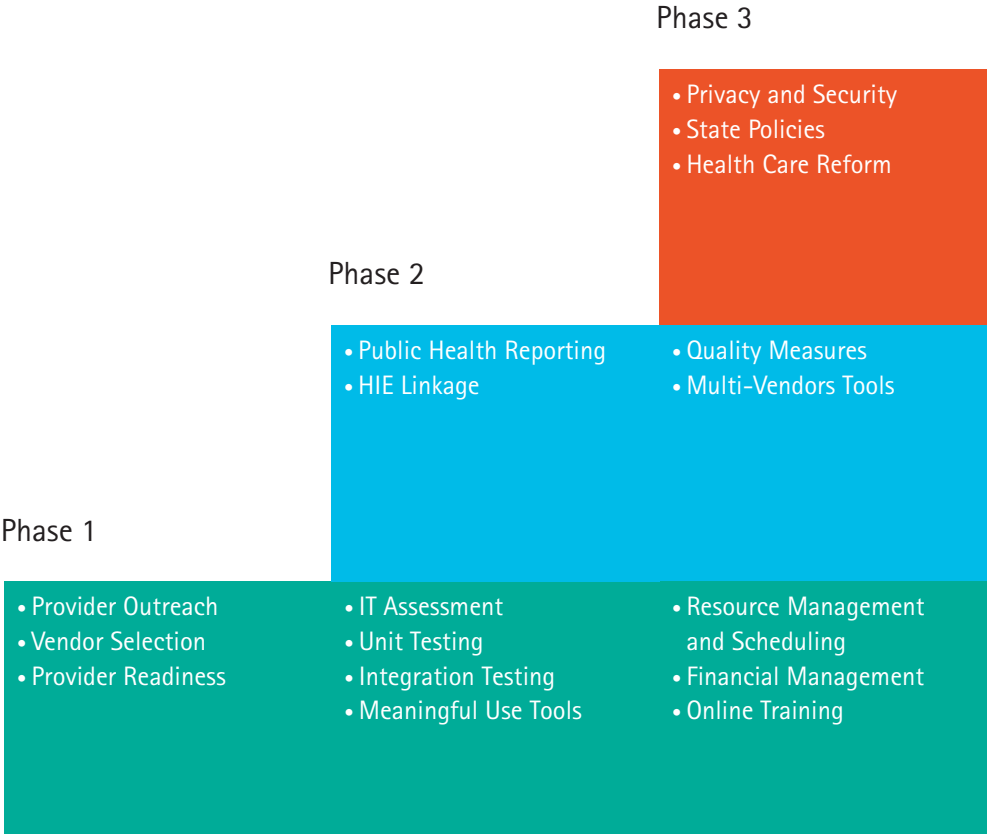


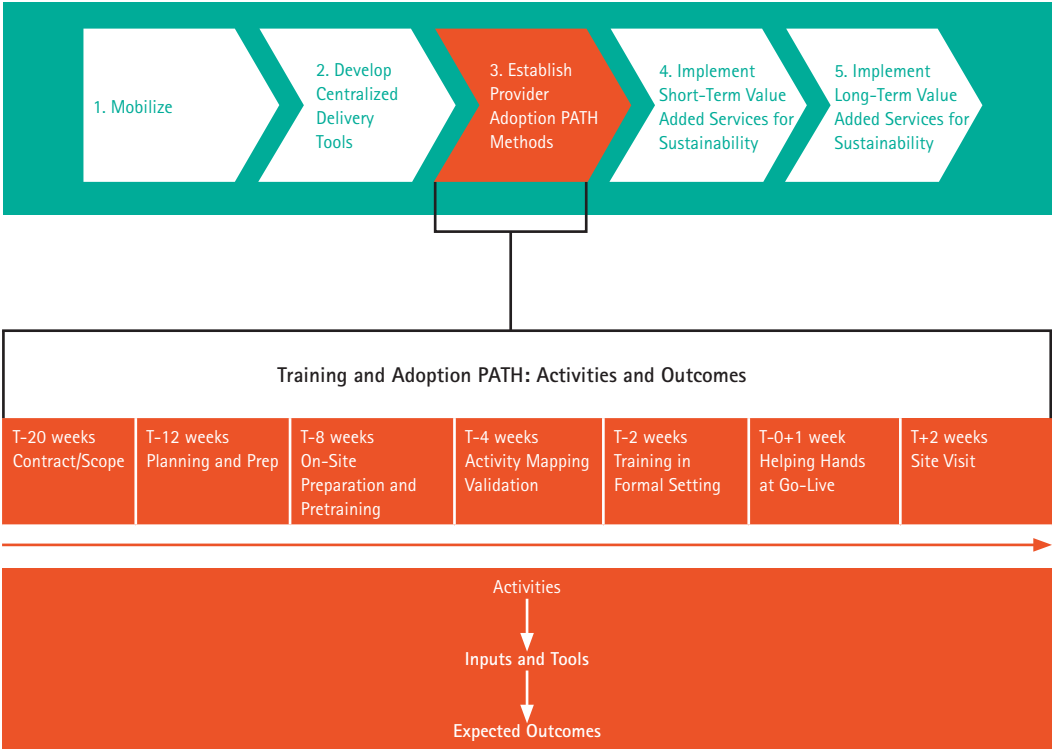
Figure 5 highlights a number of tools currently publicly available to RECs that can be leveraged to fast-track development. Accenture and PCIP have developed REC approaches that leverage some of these tools. Please see the Appendix for the complete analysis of the tools listed in Figure 5.

**Figure 5. Examples of Publicly Available Tools for RECs\***  
(see Appendix for further details)

Program	Tool Descriptions
DOQ-IT: Created for Medicare QIOs to assist them with the implementation of EHRs	Common Implementation Problems, Barriers and Solutions
	General Contracting Guidelines with EHR Vendors
	EHR Implementation Checklist
	EHR Implementation Options—Incremental vs. Big Bang: Comparing Approaches
	EHR Implementation Team
	EHR Implementation in Physician Office: Critical Success Factors
	The MedQIC Care Management Roadmap
	A Systems Approach to Organizational Redesign Workbook
Vendor-Specific Tools	Varies by vendor
AAFP	Web-based tutorials on the preparation, selection and implementation of health IT <a href="http://www.centerforhit.org">www.centerforhit.org</a>
	Physician EHR User Directory
	EHR Reviews
	Center for Health Information Technology—the nidus of expertise in health information technology
	<i>Family Practice Management Journal</i> —Articles on health IT
	TransforMED—consulting business helping practices transform to the Patient Centered Medical Home
AHRQ	Tools to help health care organizations plan for, implement and evaluate health IT—Available at <a href="http://www.healthit.ahrq.gov">www.healthit.ahrq.gov</a>
	Health IT Evaluation Toolkit
	Health IT Costs & Benefits Database Project
	Health IT Literacy Guide
	Health IT Survey Compendium
	Pediatric Rules and Reminders
	Pediatric Documentation Templates
	Health IT Adoption Toolbox
	Health IT for Children Toolbox
	AHRQ-Funded Project Resource Archives
	Health IT Bibliography
	The Health Information Privacy and Security Collaboration (HISPC) Toolkit
	Time and Motion Database

\* These tools may be subject to the intellectual property owners' standard licensing terms and conditions.

Figure 6. REC Capability Road Map for Sustainability



As we mentioned previously, it is important that each of the tools included in the methodology connect and are used by the entire team, in the same manner, so that the output of one tool supporting a step in the REC's adoption approach provides the input for the tool or set of activities needed in the next step of the approach. As illustrated in Figure 6, Accenture offers a set of tools, including the

Adoption PATH methodology approach, to help jump-start REC processes. Key components of the methodology include:

- Preparation and pretraining
- Activity mapping and validation
- Training in a formal setting
- Helping hands during go-live

As you can see from the list of activities, we have found it important to begin the go-live process approximately 20 weeks prior to go-live. This should give the REC time to help address outstanding lab interfaces (or other custom IT requests), install hardware, and perform other technical activities which may be required to confirm the training and change enablement team members are able to perform their activities.

# Sustainability

It is important for RECs to understand that the federal funding granted to an REC generally does not cover all of the activities required to support the achievement of Meaningful Use. The cost of essential services (see **Figure 7**) to each of the 1,800 providers that have implemented an EHR through PCIP in New York was roughly twice the amount of the federal grant supporting RECs of approximately \$4,400–\$5,000—per provider—and that did not include the cost of EHR software or hardware platforms. This reality may pose a serious challenge and risk for RECs—each will have to identify value-added services that align with its mission and additional funding streams to help ease the burden on the providers, and stretch to find ways to assist providers while minimizing the high-cost on-site support levels which PCIP and other early programs relied on for adoption success. Providers who are candidates for heavy and unique on-site requirements may not

be ideal candidates for this program. ONC envisions RECs as earning investments from providers seeking to reach Meaningful Use and health care institutions such as hospitals, health plans and purchasers of care. In this budget environment, the REC then should balance the cost shifting and right teaming strategies to maintain financial stability over the course of the grant to help reduce costs and earn additional funding. The “type” of REC (A, B, C or D) should provide some clarity on the focus for additional services and funding opportunities. A Type “A” REC focused on specific vendor capabilities may offer support for extended, advanced features of that EHR, whereas a Type “C” REC focused on providers may offer other services such as transcription, records conversion and revenue cycle support that small providers may need.

## Reducing Costs

Cost cutting need not mean offering fewer or less effective services; rather, services must become more scalable and collaborative. For instance, on-site technical assistance and consulting is generally the most expensive service an REC routinely provides. Such assistance should be reserved for customized training that can only be delivered on-site. Creating relevant and universal training materials and multimedia will allow consultants to spend less time explaining core curricula, and instead to focus efforts on the problems that are specific to the practice burden of one-on-one training with providers. NYC REACH also incorporates multimedia technologies

to share messages with more providers. Instructional videos can answer commonly asked questions and demonstrate what forms need to be completed, how to use an EHR feature, or the elements of one of the Meaningful Use criteria. This should relieve staff of the burden of spending hours on the phone answering questions.

### Collaboration: The Wheel Has Been Invented

RECs launching today enjoy several advantages that were mostly absent when PCIP began in 2005. Notably, simultaneous creation of RECs across the country should decrease the amount of resources needed to develop training materials and implementation methods. PCIP created a staffing model and developed training materials from scratch, but RECs should share information with one another to keep

costs down. The HITRC will focus on this exchange of skills and practices, and RECs should include these mutual resources in their planning. Shared materials may include preferred practices for implementation, project management tracking toolkits, and Meaningful Use scorecards and instructional pamphlets.

Furthermore, Meaningful Use should focus efforts of the REC, EHR vendors, and other health care institutions and groups upon specific training goals. The REC should benefit from vendors' focus upon goals in their software and training. Thus, when the REC begins to work with a practice after going live, they should already be aware of Meaningful Use and ready to start meeting the criteria.

PCIP often worked with providers with very limited knowledge of computers and IT in general, and little understanding of EHRs specifically. As adoption rates increase, physicians are more likely to get a baseline understanding of technology from their colleagues, medical societies, and other organizations, and the REC should facilitate and inform these messages.

## Overcoming the Challenge— Keys to Financial Sustainability

An Accenture market assessment shows that 64 percent of physicians from small practices (i.e., fewer than 10 physicians) plan to implement an EHR within the next three years. What are the barriers that an REC should overcome to help it earn investments from providers and health care stakeholders? When PCIP took on the challenge of attracting a \$4,000 technical assistance fee, the main challenge was the inertial pull of the status quo in the form of paper records. With the momentum of Meaningful Use funding, this case should be easier to make, but RECs will likely also need to persuade providers that they are better off joining an REC than purchasing an EHR directly from a vendor and seeking to establish Meaningful Use without approved support.

The RECs must show that their services, group purchasing discounts, and unbiased assistance are worth the costs. Because many vendors are so focused on addressing Meaningful Use criteria, and some even “guarantee” it, RECs will need to clearly state their case.

NYC REACH is making its case by comparing the total cost and benefits of EHR adoption through their program with the cost of implementing alone. This will include comparing the price with the group purchasing prices, the value of NYC REACH consulting services, and the future incentive payments for which NYC REACH members will likely be well positioned to qualify for, but also including Patient-Centered Medical Home incentives from New York State Medicaid and private payers as well as Meaningful Use. By laying out this value proposition, NYC REACH should be able to demonstrate that joining for a membership fee of approximately \$600 per provider per year is a smart investment.

### Health Plans

The vast majority of costs saved through EHR use accrue to health plans,<sup>5</sup> yet the fragmentation of the insurance market serves as a disincentive for a health plan to shoulder the cost of EHR adoption and Meaningful Use at any one practice. Ideally, RECs could

serve as points of coordination for multipayer support for Meaningful Use, building on the commitments received through Medicare and Medicaid. PCIP has received exploratory funding from some large NYC health plans, but, generally, this challenge is ongoing.

### Public Policy

In June 2008, Vermont enacted legislation to create a Health IT Fund supported through a quarterly tax on health insurers. Other states could soon follow suit as well. State funds such as these could overcome market failure and spur EHR adoption and Meaningful Use, potentially leveraging RECs as a platform.<sup>6</sup>

<sup>6</sup> Vermont—National Conference of State Legislatures: INVESTING IN HEALTH INFORMATION TECHNOLOGY: VERMONT CREATES AN E-FUND. <http://www.ncsl.org/IssuesResearch/Health/INVESTINGINHEALTHINFORMATIONTECHNOLOGYVERMONT/tabid/14458/Default.aspx>.

<sup>5</sup> Center for Information Technology Leadership (CITL), 2003

**Figure 7. Historical Costs to PCIP for Each Provider Not Live**

Type of Projected Cost	High-Level Description	Percentage of Total Estimated Costs Per Provider
Outreach	Events, presentations, phone calls, administering agreements; applies to providers using paper charts as well as those already using an EHR	11
Implementation and Integration	Initial IT assessment, tracking vendor progress, and integrating interfaces (i.e., labs); applies mainly to providers not yet using an EHR, although some who implemented on their own will need additional integration assistance	29
Quality Improvement	Visits from a Quality Improvement specialist focusing on advanced EHR workflows and Meaningful Use criteria	19
EHR Consulting	Superuser visits, EHR customization and configuration, and advanced user training (both on-site and in group classes)	8
Revenue Cycle Management	Basic and advanced billing training (both on-site and in group classes)	9
Privacy and Security	Configuring the system and consulting on staff best practices	7
Communications	Provider communications for members and non-members about REC and associated programs	2
Development	Working with vendors to incorporate public health-oriented features and improve reporting capabilities	8
Patient Engagement	Patient portal education and consulting	4
Quality Reporting	Collecting, analyzing and reporting on quality data	3

**Overcoming the Challenge—  
Real costs associated with  
implementation and support**

The experience of the Primary Care Information Project generally shows that the bulk of the expense of working with physicians comes after they are live on the EHR system. Out of the roughly \$12,000 to \$15,000 of costs that it took PCIP to get a provider from paper to meeting the current program’s quality reporting standards, only about 10 to 15 percent was spent on implementation costs. The rest of the expense, as seen in Figure 7, generally came from training staff, workflow consulting, customizing the EHR, quality improvement visits, billing training, and privacy and security consulting. Other costs, including development work, provider communications, administration, and even outreach to get physicians in the program, exist whether or not physicians start with an EHR in place.

The license cost of the PCIP software (Take Care New York), which was developed jointly with the NYC Department of Health and Mental Hygiene and eClinicalWorks, was subsidized to support maximum adoption. Additionally, PCIP secured private sector funding to offer further incentives to assist practices with overcoming obstacles to adoption. The secured funding was used to supply hardware for 100 providers and to help subsidize up-front costs.

Based on historical costs for PCIP, as shown in Figure 7, NYC REACH has projected costs to the REC to get a provider from paper to Meaningful Use. For providers already using an EHR, some costs (notably implementation and development) should be lower, but other costs including outreach,

quality improvement, and EHR consulting remain. Other RECs may offer different services and different levels of service to their providers.

Other RECs may experience different costs depending on their structure. Because NYC REACH is an extension of existing NYC public health organizations, many administrative and operational costs are already covered. On the other hand, because REACH developed out of PCIP, a city agency, PCIP takes on public health costs associated with development and quality reporting that other future RECs may not be responsible for.

# Is There Life After Meaningful Use?

## Challenges of post “Go-Live” Support

How long should an REC last beyond the projected end of federal funding for Extension Centers in 2014? Organizations laying plans for the structure of the REC must answer this question. This decision should be grounded in the mission of each REC and whether it extends beyond the widespread achievement of Meaningful EHR Use.

For example, the mission of PCIP is to improve the health of the public through health information technology, with a focus on neighborhoods in poverty. PCIP pursues this mission with the understanding that overall population health will only improve if the physicians who adopt electronic health

records use them to redesign clinical workflows to focus on chronic disease, and if health plans reward these improvements through payment reform.<sup>7</sup> This mission has led PCIP to pursue a series of pilot projects enabled by the network of practices with EHRs. With positive results, each of these could become a sustainable service offered by RECs to its members, funded by health care payers.

## Examples of Clinical Workflow Redesign

**Panel Management:** Through a private grant, PCIP places staff members called Prevention Outreach Specialists in practices one day each week to help identify and contact high-risk patients

in need of follow-up care. Because each specialist only spends one day a week at each practice, one staff member can stretch across five practices. Using registry reports that are standard in most EHRs, these staff members are able to pull lists of patients with high blood pressure, for example, and call them to schedule an appointment. Instead of simply generating automatic letters to be sent out, this approach involves an immediate “call to action.” On average, half of all patients contacted scheduled an appointment. If successful, these services could be expanded into a network of shared care management resources, as established in the Community Care of North Carolina program.

<sup>7</sup> Frieden, T.R. and Mostashari, F. “Health Care as if Health Mattered.” *JAMA*. February 27, 2008—Vol 299, No. 8.

**Patient-Centered Medical Home (PCMH) Certification:** PCIP works closely with the National Committee for Quality Assurance (NCQA) to help providers earn their Patient-Centered Medical Home certification. NCQA awards points to providers who work with PCIP and offers a significant discount to those practices. As these kinds of accreditation grow in popularity, providers will find a real value by working with RECs that can help relieve the administrative and financial burden of applying. The certifying organization also benefits from having more applicants, providing an incentive for them to cooperate with an REC.

**Care Coordination:** Based on New York City's experience, there will likely be a role for RECs to help Regional Health Information Organizations (RHIOs) and other health information exchange groups connect with small providers,

supporting significant care coordination. Because the RECs will already have consultants visiting these practices and training them on the EHR, it makes better sense for them to be involved with connecting them to the exchange infrastructure. As is the case with discounts or waived fees for PCMH certification, REC members may also receive subsidized or free connections to an RHIO as part of their membership fee.

**Payment Reform:** PCIP has also introduced a pilot pay-for-performance program that makes use of EHR data. Funded by a local nonprofit and designed in part through collaboration with a medical school, the program provides incentives for physicians who keep their patients healthy according to four quality measures: blood pressure under control; cholesterol under control; smoking cessation therapy;

and following an aspirin regimen. Providers receive additional rewards for high-risk patients, encouraging them to tackle the most difficult cases. PCIP also works with quality organizations such as Bridges to Excellence to develop similar programs.

Other RECs may consider providing additional services such as revenue cycle outsourcing, transcription support, ongoing interface support, revenue cycle outsourcing, and other support for small offices that could provide immediate revenue for RECs—especially as the longer term quality reporting services to support future stages of Meaningful Use take longer to prove their value—and RECs require sustainability now.

# Summary

Regional Extension Centers have an unprecedented opportunity to extend care delivery leading practices into small office providers while helping them adopt interoperable EHRs. Additionally, they will assist HIE state-designated entities to help implement statewide governance and technologies to promote patient-centric care. As health care reform evolves, Regional Extension Centers can provide valuable implementation resources given their local relationships and breadth of services provided. To be more successful, RECs should engage providers who are not only the "low-hanging fruit" who are easily engaged, but also those currently contemplating whether EHR adoption is in their best interest. Moving providers along the adoption path will likely require RECs to team with leading EHR vendors who will be there for

the long term. RECs will likely need to develop vendor-agnostic and vendor-specific tools to support their activities in order to help confirm that all providers are delivered quality service.

While RECs have been given a limited scope of services to provide to providers today, they should keep future demands and anticipated needs in mind when developing a sustainability plan. We recommend that the REC sustainability plan focus in the short term on enhancing clinical processes through value-added services with a long-term eye on impacting quality and health care reform initiatives.

# Appendix

## Key Functional Requirements for EHR

Stage 1 Objectives	Certification Criteria to Support Achievement of Meaningful Use Stage 1—Physicians
Use of CPOE	User can record, store, retrieve and manage orders for medications, laboratory, radiology and provider referrals.
Implement drug-drug, drug-allergy, drug-formulary checks.	<ol style="list-style-type: none"> <li>1. Generate real-time alerts at the point of care for drug-drug and drug-allergy contraindications based on medication list, allergy list, age, and CPOE.</li> <li>2. Electronic validation if drugs are in a formulary or preferred drug list.</li> <li>3. User security access right to deactivate, modify and add rules for drug-drug and drug-allergy checking.</li> <li>4. Track, record and generate reports on the number of alerts responded to by a user.</li> </ol>
Maintain an up-to-date problem list of current and active diagnoses based on ICD-9-CM or Snomed CT.	Enable user to record, modify and retrieve a patient's problem list over the patient's continuum of care in compliance with ICD-9-CM or SNOMED CT.
Generate and transmit permissible prescriptions electronically i.e. eRx.	User can generate and transmit electronic medication orders for patients.
Maintain active medication list.	User can modify, record and retrieve a patient's active medication list as well as medication history over the patient's continuum of care.
Maintain active medication allergy list.	User can record, modify and retrieve a patient's active medication allergy list as well as medication allergy history over the patient's continuum of care.
Record demographics.	User can record, modify and retrieve patient demographic data including preferred language, insurance type, gender, race ethnicity, and date of birth.
Record and chart vital signs.	Height, weight, blood pressure, BMI, growth charts, smoking history, and incorporate lab test results into EHR as structured data.
Generate list of patients' specific conditions to use for quality improvement, reduction of disparities and outreach. Report quality measures to CMS or states.	<p>User can select, sort, retrieve and output a list of patients and patients' clinical information, based on user-defined demographic data, medication list, and specific conditions.</p> <ol style="list-style-type: none"> <li>1. Calculate and display quality measure results as specified by CMS or states.</li> <li>2. User can submit calculated quality measures in accordance with the standard specified.</li> </ol>
Send reminders to patients per patient preference for preventative care/follow-up care.	Generate upon request a patient reminder list according to patient preferences based on demographic data, specific conditions, and/or medication list.
Implement five (5) clinical decision support rules.	PCIP selects DSS rules relevant to specialty or high clinical priority, including diagnostic test ordering and ability to track compliance with those rules.
Check insurance eligibility from public and private payers.	User can record and display patients' insurance eligibility, and submit insurance eligibility queries to public or private payers and receive an eligibility response.
Submit claims to public and private payers.	User can submit claims to public or private payers.
Provide patients with e-copy of their health information upon request.	User can create an e-copy of patient's clinical information, including at a minimum, diagnostic test results, problem list, medication list, medication allergy list, immunizations and procedures in human readable format and in accordance with the standards provided to the patient in electronic media or other electronic means.
Provide patients with e-copy of their discharge instructions and procedures at time of discharge and upon request.	No associated proposed Meaningful Use Stage 1 Objective
Provide patients with timely access to their health information (including lab results, problem list, medication list, allergies) within 96 hours of the information being available to the eligible professional. Additionally, provide clinical summaries for patients for each office visit.	<p>User to provide patients with online access to their clinical information, including at a minimum lab test results, problem list, medication list, medication allergy list, immunizations, and procedures.</p> <ol style="list-style-type: none"> <li>1. User to provide clinical summaries to patients (paper or electronic) for each office visit that include at a minimum, diagnostic test results, medication list, medication allergy list, procedures, problem list and immunizations.</li> <li>2. If the clinical summary is provided electronically, it must be provided in human readable format and in accordance with the standards.</li> </ol>
Capability to exchange key clinical information among providers of care and patient authorized entities. Provide summary care record for each transition of care and referral.	<ol style="list-style-type: none"> <li>1. Electronically receive a patient summary record from other providers and organizations including at a minimum, diagnostic test results, problem list, medication list, medication allergy list, immunizations, and procedures and upon receipt of the patient summary record formatted in an alternative standard, displaying it in a human readable format.</li> <li>2. User can transmit a patient summary record to other providers and organizations including at a minimum diagnostic test results, problem list, medication list, medication allergy list, immunizations, and procedures in accordance with the standards.</li> </ol>
Perform medication reconciliation at relevant encounters and each transition of care. Capability to submit to immunization registries and actual submissions where required and accepted.	Complete medication reconciliation of two or more medication lists (compare and merge) into a single medication list that can be displayed in real time. Record, retrieve and transmit immunization information to immunization registries in accordance with the standards or in accordance with the applicable state designated standard format.
Provide electronic submission of reportable lab results to public health agencies and actual submission where it can be received.	No associated proposed Meaningful Use Stage 1 Objective
Provide syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice.	Record, retrieve and transmit syndrome-based (i.e., influenza-like illness) public health surveillance information to public health agencies in accordance with the standards.
Protect electronic health information (EHI) created or maintained by the certified EHR Technology through the implementation of appropriate technical capabilities.	<ol style="list-style-type: none"> <li>1. Assign unique name and/or number for identifying and tracking user identity and establish controls that permit only authorized users to access EHI.</li> <li>2. Permit authorized users to access EHI during an emergency.</li> <li>3. Terminate an electronic session after a predetermined time of inactivity.</li> <li>4. Encrypt and decrypt EHI information according to user-defined preferences in accordance with the standard.</li> <li>5. Encrypt and decrypt EHR information when exchanged in accordance with the standard.</li> <li>6. Record actions related to EHI in accordance with the standard, provide alerts based on user defined events, and electronically display and print all or a specified set of recorded information upon request or at a set period of time.</li> <li>7. Verify that EHI has not been altered in transit and detect the alteration and deletion of EHI and audit logs in accordance with the standard.</li> <li>8. Verify that a person or entity seeking access to EHI is the one claimed and is authorized to access such information.</li> <li>9. Verify that a person or entity seeking access to electronic health information across a network is the one claimed and is authorized to access such information in accordance with the standard.</li> <li>10. Record disclosures made for treatment, payment and health care operations in accordance with the standard.</li> </ol>

## Examples of Publicly Available Tools for RECs\*

Program	Summary of Tools Available	Pros	Cons	Comments
DOQ-IT: Created for Medicare QIOs to assist them with the implementation of EHRs	Common Implementation Problems, Barriers and Solutions	Comprehensive tool. It is easy to read in table and bullet format. Covers many common barriers.		This tool is about 5 years old and does not address current vendor issues or Meaningful Use criteria.
	General Contracting Guidelines with EHR Vendors	While this tool covers all of the major categories, it is very general.	Requires vendor-specific information.	This tool is about 5 years old.
	EHR Implementation Checklist	This tool is easy to read (outline format).	Requires vendor-specific information.	This tool is about 5 years old.
	EHR Implementation Options—Incremental vs. Big Bang: Comparing Approaches	This one-page document is easy to read.	Requires vendor-specific information.	This tool appears to be somewhat subjective.
	EHR Implementation Team	Basic one-page document describing the ideal composite of an EHR implementation team.	Requires vendor-specific information.	
	EHR Implementation in Physician Office: Critical Success Factors	This tool is a good reference guide. It contains multiple references that would give more in-depth detail than is provided in this document.	Requires vendor-specific information.	This tool is about 5 years old and our copy has not been revised.
	The MedQIC Care Management Roadmap	This tool is a very good step-by-step "how to" guide for care management.		We found this tool very useful; however, like all the other DOQ-IT tools at our disposal, it is about 5 years old and needs to be updated.
	A Systems Approach to Organizational Redesign Workbook	This workbook contains a plethora of information regarding office redesign including, case studies and tools to promote system change.		This tool was designed to be used throughout the redesign process. It contains multiple facets of redesign that we did not have the opportunity to use in the last contract. In briefly reviewing it again, it appears that it would be very helpful, but it needs to be updated.
Vendor-Specific Tools	Varies by vendor	Links directly to the vendor functionality	Often have only a thin layer of support for change management, with a focus on required steps for technology implementation	Often difficult to manage multiple vendor implementations only with each vendors' specific tools as they are often different
AAFP	Web-based tutorials on the preparation, selection and implementation of health IT <a href="http://www.centerforhit.org">www.centerforhit.org</a>	Freely available. Practical based		
	Physician EHR User Directory	Ability for physicians to find a physician like them in a practice like theirs to discuss EHR products & their adoption and ongoing use	Available only to AAFP members	
	EHR Reviews	Reviews for practicing physicians. Over 700 reviews on around 50 EHR products	Available only to AAFP members. Limited to EHR products. No specific feedback on meaningful use functionalities	
	Center for Health Information Technology—the nidus of expertise in health information technology	Run and staffed by family physician informatists. Extensive understanding of health IT, Meaningful Use, and PCMH	Limited resource	
	<i>Family Practice Management Journal</i> —Articles on health IT	Many written by physicians in the field. Articles are freely available.	New issues are embargoed for subscribers before available freely to all	
	TransforMED—consulting business helping practices transform to the Patient Centered Medical Home	Hands-on assistance and expertise. Meaningful Use is subsumed within PCMH	Paid services	
AHRQ	Tools to help health care organizations plan for, implement and evaluate health IT—Available at <a href="http://www.healthit.ahrq.gov">www.healthit.ahrq.gov</a>			
	Health IT Evaluation Toolkit	This tool includes a detailed guide for developing an evaluation plan with individual project examples. Contains both a Health IT Evaluation Measure Quick Reference and specific HIE Evaluation Toolkit.		This toolkit provides guidance on how to evaluate health IT. Example measures relevant to quality, safety and efficiency are provided along with suggested data sources and the relative costs to collect the measures.

\* These tools may be subject to the intellectual property owners' standard licensing terms and conditions.

Program	Summary of Tools Available	Pros	Cons	Comments
	Health IT Costs & Benefits Database Project	This database contains literature articles about the costs and/or benefits of health information technology, and is searchable by the user in a variety of ways.	The tool does not allow the individual to search on keywords, only categories. Also the results returned are a summary display—the user will have to obtain a copy of the article from another source.	The tool is designed to find publications from a literature search on the topic of health information technology.
	Health IT Literacy Guide	The guide includes a checklist and presents design principles and strategies to increase consumer accessibility to health IT.		This guide helps developers and purchasers of health IT reach adults with limited literacy.
	Health IT Survey Compendium	The surveys in the compendium cover a broad spectrum, including user satisfaction, usability, technology use, product functionality, and the impact of health IT on safety, quality, and efficiency.		This searchable resource contains a set of publicly available surveys to assist organizations in evaluating health IT.
	Pediatric Rules and Reminders	The documents provide details on each reminder and how it might be implemented in an electronic health record system.	These rules were generated using national, state and local guidelines, and group consensus regarding best practices. These guidelines and their interpretation may not represent the standard of care across all regions or settings.	This tool provides pediatricians and other clinicians with the information needed to develop and implement specific rules and reminders into an EHR system for pediatric patients.
	Pediatric Documentation Templates	These templates are based on national guidelines and can be used to electronically document visits.		This tool provides ambulatory clinicians with a series of templates for acute and chronic pediatric conditions that can also be implemented into an EHR system.
	Health IT Adoption Toolbox	The toolbox is designed to address the needs of a broad range of providers.		The toolbox contains a range of resources relevant to the various stages of considering, planning, executing, and evaluating the implementation of health IT.
	Health IT for Children Toolbox	This tool is designed for a diverse set of stakeholders, including state and federal policy makers, providers, insurers, teachers, and families and other caregivers.		The tool is meant to serve those within the children's health community who seek to integrate information technology into promoting pediatric health and well-being. Resources compiled for this toolbox include information from nonprofit organizations, Government agencies, academic research, and various organizations in the private sector.
	Rural Health IT Adoption Toolbox	Resources compiled for this toolbox include information from both public and private sector entities, including government agencies, academic institutions and research organizations.	This toolbox is designed for rural health providers, but is intended to inform state and federal policy makers, insurers, and other interested stakeholders regarding the special considerations for health IT adoption in rural settings.	The Rural Health IT Adoption Toolbox is a resource created to address the needs of rural providers in the planning and implementation of health information technology.
	AHRQ-Funded Project Resource Archives	This tool was created during execution of an AHRQ-funded health IT contract or grant and provided to the AHRQ National Resource Center for Health Information Technology (Health IT) by project team leaders.	The tool does not allow the individual to search on keywords, only categories.	Sample resource documents from AHRQ-funded projects that have successfully adopted health IT applications and systems.
	Health IT Bibliography	For each category, users will find a mixture of both peer-reviewed articles from professional journals and Web-based resources from highly respected health care and IT organizations.	This resource is designed to be dynamic, growing with the health IT community to include new knowledge, resources, and technologies; however, it currently has limited categories.	The Health IT Bibliography puts expert-selected knowledge resources on health IT at the fingertips of those seeking to better understand how health IT can transform everyday care by improving its quality, safety, efficiency and effectiveness.
	The Health Information Privacy and Security Collaboration (HISPC) Toolkit	This toolkit provides guidance for conducting organization-level assessments of business practices, policies, and state laws that govern the privacy and security of health information exchange (HIE).		The toolkit was developed as part of the Agency for Healthcare Research and Quality (AHRQ) and Office of the National Coordinator for Health Information Technology (ONC) joint-funded Health Information Security and Privacy Collaboration (HISPC) project.
Time and Motion Database		The tool—a Microsoft Access database—allows observers to record time and motion data and stores them for analysis.		This tool enables organizations to measure the impact of health IT systems on clinical workflow through the collection of time-motion study data.

## About NYC REACH

The Regional Electronic Adoption Center for Health is the federally designated Health IT Regional Extension Center for New York City, charged with assisting physicians as they adopt and use Electronic Health Records (EHRs). A collaboration between the Health Department's Primary Care Information Project and the Fund for Public Health in New York, NYC REACH supports physicians to practice medicine that emphasizes chronic disease prevention and management using patient information from EHRs. NYC REACH works closely with physicians to help them navigate the complicated world of health care technology, including government entities, vendors, and health care quality organizations. Its home page is [www.nycreach.org](http://www.nycreach.org).

## About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with more than 181,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US \$21.58 billion for the fiscal year ended August 31, 2009. Its home page is [www.accenture.com](http://www.accenture.com).

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