

## HEALTH CENTER CONTROLLED NETWORKS SERIES

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The Health Resources and Services Administration, Bureau of Primary Health Care (HRSA/BPHC) supported this publication under Cooperative Agreement Number U30CS08661-02-00. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of HRSA/BPHC.

## Using Health Information Technology to Improve Quality

The United States is in the midst of a tremendous financial investment in health information technology (HIT) ) with the enactment of the American Recovery and Reinvestment Act of 2009 (ARRA), which provided financial incentives to health care providers, including Federally Qualified Health Centers (hereafter referred to as health centers) to implement electronic health records (EHRs). This investment is based on the assumption that a substantial investment in building an infrastructure of HIT will result in improvements in quality, safety, and efficiency necessary to improve care and reduce costs. In fact, to qualify for financial incentives, the law specifies that providers must demonstrate “meaningful use” as a result of EHRs, such as engaged patients and families; improved care coordination; improved population and public health; and assurance of adequate privacy and security protections for personal health information. See page two for information on “meaningful use.”

This Information Bulletin will:

- ◆ Examine the context that supports HIT adoption among health centers, including financial incentives and implications of “meaningful use;”
- ◆ Identify factors leading to successful implementation of HIT in health centers, including essential elements for quality improvement; and
- ◆ Describe aspects of the Health Center-Controlled Network (HCCN) approach that have and continue to foster success.

## “Meaningful Use” of Electronic Health Records

The enactment of the American Recovery & Reinvestment Act of 2009 (ARRA) provides financial incentives to health care providers to implement electronic health records (EHRs). In order to qualify for the incentives, Congress specified that eligible professionals must demonstrate “meaningful use” of certified EHR technology.

In August of 2009 the Meaningful Use Workgroup to the Health IT Policy Committee issued a draft definition of “meaningful use” for public comment. The draft states that measurable improvement in patient outcomes, patient engagement, care coordination, and population health are at the core of demonstrating meaningful use of HIT. The preamble sets a comprehensive vision:

“We recommend that the ultimate goal of meaningful use of an Electronic Health Record is to enable significant and measurable improvements in population health through a transformed health care delivery system. The ultimate vision is one in which all patients are fully engaged in their healthcare, providers have real-time access to all medical information and tools to help ensure the quality and safety of the care provided while also affording improved access and elimination of health care disparities.”<sup>1</sup>

To evaluate use of technology, the Health IT Committee is refining a matrix mapping quality goals to various objectives and their associated measures. At the time of this writing the measures for each objective are under review by CMS and are subject to change. The proposed measures can be found in the *Federal Register* 42 CFR Parts 412, et al. Medicare and Medicaid Programs; Electronic Health Record Incentive Program; Proposed Rule published on January 13, 2010 and can be accessed on the HHS web site at <http://www.cms.gov/Recovery/Downloads/CMS-2009-0117-0002.pdf>

GOAL	OBJECTIVES
Improve quality, safety, efficiency and reduce health disparities	<ul style="list-style-type: none"> <li>• Computerized Physician Order Entry (CPOE) Medication Safety functionality</li> <li>• Summary lists: problems, medications, allergies, and directives</li> <li>• Seamless management of laboratory results</li> <li>• Reminders and prompts to support preventive care and chronic disease management</li> <li>• Population management by disease and disparity groups</li> </ul>
Engage patients and families	<ul style="list-style-type: none"> <li>• Encounter summaries</li> <li>• Access to relevant information by paper and/or electronically</li> <li>• Access to patient specific education resources</li> <li>• Individual patient access</li> </ul>
Improved population and public health	<ul style="list-style-type: none"> <li>• Interaction with registries</li> <li>• Ability to submit information for public health surveillance</li> </ul>
Improve care coordination	<ul style="list-style-type: none"> <li>• Medication reconciliation</li> <li>• Ability to exchange information electronically</li> <li>• Services integration</li> <li>• Ability to streamline administrative and business services</li> </ul>
Ensure adequate privacy and security protections	<ul style="list-style-type: none"> <li>• HIPAA compliance</li> <li>• Compliance with Nationwide Privacy and Security Framework principles.</li> </ul>

1 <http://healthit.hhs.gov>

## THE ENVIRONMENT FOR ADOPTING HIT

A 2003 national physician survey conducted by the Commonwealth Fund and published in *Health Affairs* demonstrated that achieving the full benefits of technology, including quality improvement, was not a simple or guaranteed outcome. Fewer than one-third of physicians in the survey had any data on the quality of their clinical performance, and seven out of ten physicians thought the general public should not have access to quality-of-care data.<sup>2</sup> Although these findings may have been due to physicians' practices not having fully functional EHRs, or EHRs that would not have met "meaningful use" criteria, the results highlight the level of change needed in physician practices and culture.

The 2008 Study by DesRoches and others identified that physicians having fully-functional EHRs reported positive effects of the system on the quality of clinical decisions (82%), communication

with other providers (92%) and patients (72%), prescription refills (95%), timely access to medical records (97%), and avoidance of medication errors (86%).

Furthermore, 82 to 85% reported a positive effect on the delivery of long-term and preventive care that meets guidelines.<sup>3</sup>

Despite challenges that providers face in achieving the benefits of HIT, health centers have inherent characteristics that predispose them to be more amenable to HIT adoption and implementation. Beginning in 1994 and with support from the Health Resources and Services Administration of the U.S. Department of Health and Human Services, health centers began to build on shared organizational needs and functions to achieve gains in quality improvement and information technology. This model continues today as Health Center-Controlled Networks (HCCNs). For information about Networks, including their history, services, resources, locations, and how to join, go to <http://www.hrsa.gov/healthit/healthcenternetworks/>

*Despite challenges that providers face in achieving the benefits of health information technology, Federally Qualified Health Centers (health centers) have inherent characteristics that predispose them to be more amenable to HIT adoption and implementation.*

2 Anne-Marie J. Audet, M.D., Michelle M. Doty, M.P.H., Ph.D., Jamil Shamasdin, and Stephen C. Schoenbaum, M.D., M.P.H., "Measure, Learn, and Improve: Physicians' Involvement in Quality Improvement," *Health Affairs*, 24 no.3 (May/June, 2005): 843-53.

3 Catherine M. DesRoches, Dr.P.H., Eric G. Campbell, Ph.D., Sowmya R. Rao, Ph.D., Karen Donelan, Sc.D., Timothy G. Ferris, M.D., M.P.H., Ashish Jha, M.D., M.P.H., Rainu Kaushal, M.D., M.P.H., Douglas E. Levy, Ph.D., Sara Rosenbaum, J.D., Alexandra E. Shields, Ph.D., and David Blumenthal, M.D., M.P.P., "Electronic Health Records in Ambulatory Care - A National Survey of Physicians," *New England Journal of Medicine*, 359 no. 1, (July 3, 2008): 50-60.

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## ADOPTING INTEGRATED HIT IN HEALTH CENTERS

Several characteristics of health centers predispose them to be able to successfully leverage HIT as a tool for quality improvement. These include already having:

- ◆ Established requirements to measure and report quality in compliance with national standards;
- ◆ A framework for approaching improvement in care delivery and measuring outcomes;
- ◆ Experience in utilizing registries to manage populations and report quality;
- ◆ A culture and infrastructure for knowledge sharing and collaboration.

## Health Disparities Collaborative Program Helps Focus on Quality Improvement

From 1998 to 2008, the Health Resource and Services Administration's (HRSA) Health Disparities Collaborative (the Collaborative) program helped encourage health centers across the country increase their focus on quality improvement, and increase their capacity to address

clinical outcomes and equity using quality improvement methodology. Through participation in the Collaborative, health centers adopted principles of Ed Wagner's Care Model<sup>4</sup> and the Breakthrough Series approach<sup>5</sup> for rapid cycle quality improvement promoted by the Institute for Healthcare Improvement. The Collaborative experience also promoted adoption of evidence based care guidelines, and measurement of clinician and population adherence to guidelines and outcomes. Reporting of these measures was integral to the Collaborative and created a culture of data driven performance improvement among health centers. The introduction of *PECS*, an electronic database used for population management and reporting on clinical measures, also aided in preparing health centers for HIT adoption as centers collaborated to leverage shared knowledge, approaches, and resources to accomplish more rapid and efficient gains. The lack of integration of *PECS* data collection and reporting with care delivery became a driver for health centers to seek more integrated HIT solutions such as electronic health records.

## Health Center- Controlled Networks Program: A Model for HIT Adoption

HRSA's Collaborative program was a nation-wide effort to boost the quality improvement capacity and efficiency of business operations at health centers. The HCCN grant program, initially called the Integrated Services Delivery Initiative (IDSI) program, was developed by HRSA in 1994 to support the creation, development, and operation of a common infrastructure to provide centers with greater economies of scale and levels of expertise.

HCCNs performed core business functions across participating health centers. Examples ranged from practice management and revenue cycle operations, credentialing and privileging programs, to clinical quality improvement programs. In some cases HCCNs facilitated shared use of HIT among participating provider practices, such as EHRs and chronic disease registries. Pooling resources led to increased efficiency, reduced costs, and improved health care quality and access for underserved and uninsured populations.

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4 See <http://www.ihl.org/IHI/Topics/ChronicConditions/AllConditions/Changes/>

5 See <http://www.ihl.org/IHI/Topics/Improvement/SpreadingChanges/Literature/TheBreakthroughSeriesIHIsCollaborativeModelforAchievingBreakthroughImprovement.htm>

In 2006, in response to then-President Bush's goal that by 2014 every American would have their data stored in an EHR, HRSA reorganized the HCCN grant program to focus on the adoption of HIT. HRSA determined that compared to small, individual health centers, HCCNs were more likely to successfully implement EHRs and HIT and to use it to improve healthcare quality for vulnerable populations.<sup>6</sup> Data from the April 2010 progress reports to the Bureau of Primary Health Care indicate the success of the HCCN program –

- ◆ HCCNs are implementing an EHR in almost 300 health centers of which almost 200 have gone live. Of the health centers funded in 2007, with the project period ending August 31, 2010, 81% have gone live.
- ◆ HCCNs are working with over 160 health centers doing some kind of HIT innovation, of which 84 have gone live.

A list of HCCNs that are currently funded by HRSA can be found at <http://www.hrsa.gov/healthit/healthcenternetworks/>. A list of all HCCNs including those that are not currently funded by HRSA can be found at the NACHC web site at <http://www.nachc.com/HCCNs.cfm>

## COMPONENTS OF HEALTH INFORMATION TECHNOLOGY

The Office of the National Coordinator for Health Information Technology (ONC) defines the role of HIT as:

“Health information technology allows comprehensive management of medical information and its secure exchange between health care consumers and providers.”

The term HIT has been used to refer to a wide variety of systems and technologies, including electronic medical/health/dental record systems, electronic prescribing systems, patient portals, personal health records, chronic disease management systems, data warehouse/reporting systems, digital imaging systems, and devices capturing medical information/observations in digital format. This is by no means an exhaustive list but does include some key elements of HIT.

Underlying these technologies are some key features with potential to improve quality and safety:

- ◆ **Enhanced availability and display of information** -- even modest improvements lead to improvements in quality and efficiency. Information missing and/or unavailable at the point of care can lead to duplication of services, inappropriate care, and missed care, which can all have negative consequences.
- ◆ **Enhanced portability of information** – access to patient records at the point of care at all times, even in a remote location or after hours, is important to reduce medical errors and to ensure appropriate testing. This implies a need for application hosting arrangements and help functions that support such access.
- ◆ **Decision support** – to guide delivery of patient care. Templates for documentation can provide *passive decision support* by prompting elements of care that should be addressed in various types of visits. However, this form of decision support does not take into account individual patient characteristics or actual current health status with regard to care recommendations. More significant gains in quality and efficiency come from *active clinical decision support* and performance measurement, which are available through fully functional EHRs. Active clinical decision support is a medical tool for clinical staff that guides care decisions by evaluating current patient status against relevant care guidelines.
- ◆ **Data aggregation and analysis** -- for performance measurement and population management.
- ◆ **Quality reporting** – at individual and population levels.

<sup>6</sup> <http://www.hrsa.gov/healthit/frn091906.htm>

## “Health Information Technology” — what does it include?

The term HIT has been used to refer to a large variety of systems and technologies, including:

1. Electronic capture and storage of information, in the inpatient or outpatient setting, including
  - a. Electronic Medical Records (dental, mental health, or case management records)
  - b. Electronic Health Records (more comprehensive than an EMR)
  - c. Personal Health Records (patient controlled)
  - d. Population Management Systems and Disease Registries
  - e. Picture Archiving and Communication Systems (PACS)
  - f. Data warehouses
  - g. Scanning of written and printed documents relating to health care
  - h. Other diagnostic tools (EKG, electronic stethoscopes)
2. Electronic reporting systems:
  - a. May be built into a storage system or
  - b. May draw information from a storage system and includes:
    - i. Reporting software (e.g. Crystal reports)
    - ii. Business Intelligence tools (e.g. Cognos)
    - iii. Commercial database products (e.g. SQL or Access)
3. Any type of technology-aided exchange of information, such as
  - a. Video conferencing systems
  - b. Telephone conferencing systems
  - c. Voice recognition systems
  - d. Text communication systems (similar to email)
  - e. Digital retrieval of laboratory, radiology, dictation reports
  - f. Automated telephone confirmation or answering systems
  - g. Web-site based information exchange
  - h. Electronic Prescribing systems
4. Tools for aggregating and retrieving non-patient specific information
  - a. Drug references (Epocrates, Micromedix)
  - b. Medical knowledge summarized by topical experts (Up to date)
  - c. Searchable access to the published medical literature (MD Consult, Pubmed)
  - d. Diagnosis-support tools (Ovid)
  - e. Analysis of evidence (Essential Evidence Plus; Cochrane database)
5. Electronic security systems to protect the storage, reporting and communication of information.
6. Specific hardware designed to perform the activities listed above.

Reference: OHIT: <http://healthit.hhs.gov>

## FACTORS ASSOCIATED WITH GAINS IN QUALITY AS A RESULT OF HIT

### A Guiding Vision and Planning

A common vision of quality and a clear statement of goals must guide the selection of technology and decisions about implementation. Furthermore, clinicians must agree to capture and process data in a standardized way so the data is available in an appropriate format for higher level data functions. This agreement rests upon embracing the relationship that evidence-based practice recommendations, decision support, and quality measurement has on improved care and better outcomes for patients.

### Functionalities of HIT

**Data** – The underlying functionality of selected software/technology must allow data to be defined and captured in a uniform way that can be mapped to specific care elements, clinical/practice recommendations, and to performance measures. For example, software systems must be able to capture data such as diagnosis and treatments in a specific format and area of the database, and make it easy to report on all patients with a specific diagnosis. This would allow a practice to implement a clinical decision rule that all

diabetic patients have a retinal screening every year -- pulling a report of all diabetics that have not had a retinal screening in the past year and targeting retinal screening for the patients on their next office visit. This would also allow the system to prompt the provider at the point of care regarding these disease specific issues. The technology must also be adaptable as measures and recommendations change over time or as knowledge evolves.

**Applications** – Meaningful use of electronic health records requires an ability to generate reports based on the data entered into the EHR software. However, it is important to recognize that EHRs in their current state are not report writing systems. They are transactional systems that capture and display information on a transaction by transaction basis. Utilizing reporting systems that are outside of the EHR and extracting the information from the EHR is necessary at this time in their development in order for HIT to meet its many desired objectives. For example, the ability to support population level management and

performance measure reporting often requires more complex analysis or queries than are native to an EHR system designed as a patient level, transactional database. Therefore data warehouse reporting systems and/or chronic disease management technology may need to be integrated with an EHR to meet these complex needs.

## Universal Use to Capture Data

To fully support quality gains from higher level functionality, universal use of the system by all clinic staff, with all relevant elements of the care process captured at point of care is required. This implies that data capture will be as simple as possible and integrated into the workflow. Since this entails significant change, incorporation of change management strategies and support for all levels of clinical staff to reinforce vision and adherence to a new process must be incorporated into the approach.

## VALUE OF ELECTRONIC HEALTH RECORDS IN HEALTH CENTERS

Decision support, usually in the form of computerized reminders, has been cited as a common component in several studies that demonstrates the positive impact of electronic health records (EHRs) on quality measures.<sup>7</sup> While most of the research investigating the value of EHRs has come from large, benchmark institutions with internally developed systems, there is a growing body of literature around the experience of EHR implementation in health centers.

Early health center research shows that the gains, or value, from the implementation of EHRs can be characterized as measurable gains in quality improvement rather than financial gains. In a retrospective qualitative study of six health centers with EHRs, Miller et al<sup>8</sup> found that health centers investing in EHRs gained some EHR-related efficiencies such as reduced medical record and transcription costs, but these efficiencies did not cover start-up and ongoing EHR costs. All but one health center in the study reported an ongoing net financial loss. These early adopters did not have the benefit of implementing through a HCCN or with federal grant funds from HRSA's Capital Improvement Program (CIP) or incentive funds now available via the HITECH Act.

7 Chaudry B, et al. "Systematic Review: Impact of Health Information Technology on Quality, Efficiency, and Costs of Medical Care," *Annals of Internal Medicine*, 144 no.10, (2006): 742-752.

8 Miller RH, West CE. "The Value of Electronic Health Records in Community Health Centers: Policy Implications," *Health Affairs* 26, no. 1, (2007):206-214.

In contrast, all six health centers cited gains in quality improvement following the implementation of their EHR. Following the Health Disparities Collaborative's data-driven improvement model, health centers implemented quality changes in several domains.

1. Data collection using standardized templates;
2. Reminders at the point of care;
3. Generation of lists of patients needing evidence based services;
4. Development of detailed performance reports; and
5. Development of materials for patient self-management.

The availability of CIP funds combined with incentives under the American Recovery and Reinvestment Act (ARRA) of over \$63,000 per Eligible Medicaid Professional, the availability of more experienced HCCNs, and the national focus on the need to change our health care system has significantly changed the landscape to make implementation of EHR's a requirement.

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## CHALLENGES WHEN IMPLEMENTING ELECTRONIC HEALTH RECORDS

Early experience adopting EHRs suggests the most important approach is to have a culture of continuous improvement informed by data. Fundamental aspects of such a culture include the ability to:

- ◆ Use data to generate actionable reports for decision-makers and
- ◆ Develop an infrastructure to act upon the data.

Performance improvement strategies may include enhanced use of technology such as more sophisticated or targeted clinical decision support or additional technology, or it may be non-technical systems change.

## Clinical Decision Support Challenges

Clinical decision support requires adoption of care standards, incorporation of relevant data elements, and appropriate design and prioritization for delivery of prompts to clinicians.

- ◆ If clinicians do not agree to standards underlying the decision support, they will not adhere to recommendations.

- ◆ Inappropriate prompts based upon inaccurate or incomplete data will undermine confidence, and excessive prompts will lead to user fatigue.
- ◆ Data integrity is difficult where sources of data lie outside the organization, where they are not in electronic format or other cases where capture is dependent upon clinical staff adhering to data entry protocols.
- ◆ Laboratory results reported by reference laboratories, integral to many clinical protocols for decision support and performance measures, in many instances do not adhere to standards. Interfaces therefore require significant ongoing management to assure accurate capture of results.

Successful use of clinical decision support requires an infrastructure to 1) monitor accuracy of data capture and 2) incorporate clinician input and involvement of clinical informatics experts. In the initial stages of implementation, active clinical decision support should be limited to avoid "alert fatigue" and linked to the highest priority conditions where performance improvement efforts can be targeted.



## Performance Measurement Challenges

Proliferation of multiple measures, lack of data specifications for many performance measures, and limitations of most commercial EHRs to incorporate these reporting functions into their basic programs has made it difficult for many organizations to produce desired population level reports. Even with pre-defined and pre-validated (“canned”) reports, health centers conducting quality improvement work will find that they need some capacity to create custom reports.

The proliferation of clinical data can be overwhelming for health centers. In the absence of a strategy for prioritizing measures and displaying them in formats that make them useful to key stakeholders, data will not be utilized to drive improvement activities. Data displays that are graphic, easy to interpret, and highlight performance against benchmarks can be designed around measures selected by organizational leaders and stakeholders.

Health centers should advocate for adoption of standardized, uniform performance measures, such as National Quality Forum endorsed measures based upon consensus by the American Medical Association’s Physician Consortium for Performance Improvement. Consolidation of performance

measures will make capture and reporting less burdensome, increase the ability of vendors to address and support performance measurement, and augment opportunities for benchmarking. HCCNs provide an opportunity for all health centers that are part of the HCCN to agree on uniform measures for performance improvement. We expect the meaningful use measures to evolve into de facto uniform nation-wide standardized measures.

## Common Health Center Challenges

Challenges most commonly cited by health centers are cost, complexity of project, access to appropriate expertise, and the ability to manage organizational change and resistance.

Certain aspects of implementation require attention to avoid failed, stalled, or sub-optimal implementations:

- ◆ **Competent project management** – in all 4 of the following areas:
  1. Overall project management,
  2. IT project management,
  3. Operations project management, and
  4. Management of the clinical customization of the system.
- ◆ Adequate **training** of staff on software and workflow redesign – initial and ongoing.
- ◆ Appropriate **selection of technology** -- matched to clinical and organizational objectives.
- ◆ **Full appreciation of costs** – initial purchase and ongoing support. Purchase decisions should be made in the context of a long-term investment. Given that software costs are usually only about 20% of total implementation costs, and that inadequate software can lead to higher ongoing costs, a seemingly less expensive acquisition may cost more in the long-term. Furthermore, adequate funding for the complete cost of implementation and ongoing support are crucial. It is imperative that health centers conduct adequate due diligence around initial and ongoing costs prior to implementing any HIT system.
- ◆ Well planned and managed **project schedule** – realistic and flexible. One common mistake is having unrealistic estimates of the time it takes to complete each step in the project without a willingness to be flexible or to adjust time frames to accommodate delays encountered throughout the process.

- ◆ **Well-planned hardware deployment** – Consider hosting and access needs; configuration of end-user equipment and exam rooms; ergonomic factors; and development of a network infrastructure able to handle the initial and future workload imposed by the new technology.
- ◆ **Adequate workflow analysis and redesign** – with appropriate involvement of front-line staff.
- ◆ **Anticipation of ongoing support infrastructure** -- provide ongoing support and optimization of the technology after going live.

## Challenge to Reduce Errors

While there is much evidence that EHR implementation *can* improve quality, it can be dangerous to assume that quality will automatically improve with every EHR implementation. EHR implementation can lead to increased medical errors; these seem to be related to human response to changed workflows. Actively searching for increased errors during implementation will help health centers adapt appropriately to problems as they develop. Two successful strategies: 1) retrain staff and 2) refine workflows to include checks and balances against errors.

## HEALTH CENTER-CONTROLLED NETWORKS PROMOTE SUCCESS

Health centers participating in Health Center-Controlled Networks (HCCNs) have access to scarce/costly expertise and pooled knowledge and experience accumulated from multiple implementations. In addition, reporting and quality improvement infrastructure and opportunities to benchmark data are greatly enhanced in this type of model.

In the 2008 NACHC *Survey of Community Health Centers HIT Adoption*, successful achievement of advanced functionality and gains was correlated with a center's participation in a HCCN. Additionally, health centers that are part of HCCNs are well on their way to meeting "meaningful use" criteria and being able to receive Medicaid Incentive payments:

- ◆ 97% have Practice Management Systems installed
- ◆ 73% are Screening for Eligibility electronically
- ◆ 67% are using Disease Registry functions
- ◆ 81% have Clinical Decision Support functionality
- ◆ 65% use E-Prescribing
- ◆ 52% use Computerized Physician Order Entry (CPOE)
- ◆ 99% use Certified EHR Technology

Typical services provided by an HCCN include:

- ◆ Procurement and management of licenses/vendor relations
- ◆ Hosting
- ◆ Clinical content development
- ◆ Implementation support
- ◆ Help desk
- ◆ Development and management of interfaces
- ◆ Optimization of use

*... it can be dangerous to assume that quality will automatically improve with every EHR implementation.*

## Maximize HIT Investment

Health centers are strongly encouraged to consider joining a HCCN in order to maximize their investments in HIT. There are a number of reasons for this.

1. HCCNs provide economies of scale via group purchasing for hardware and software licenses that an individual health center is unable to realize going it alone.
2. HCCNs have become experts in planning, evaluating, contracting and implementing HIT in health centers.
3. HCCNs provide a first line of support for health centers in their network and are able to be more responsive than a vendor.
4. HCCNs can guide health centers through the HIT implementation process with the least amount of downtime necessary and provide an effective and efficient implementation.
5. HCCNs can assist health centers to improve the quality of care they provide by utilizing HIT to its best advantage.

Other benefits of the HCCN approach include:

6. HCCNs can pool shared resources and access to shared technical expertise, including knowledge from vendors of HIT services to a health center-owned resource. There is a net savings to members since resources that would otherwise be spent outside of the health center sector can instead be reinvested for other quality enhancement activities.
7. Many health centers cannot absorb the expense of a Chief Information Officer nor do they have resources to support optimal adoption and use of HIT, but utilizing a HCCN provides the availability of this expertise and skills without the responsibility of bearing all of the costs. Also, HCCN staff accumulates experience and knowledge relevant to health centers, surpassing that available from the commercial sector.

Both of these advantages have positioned health centers in HCCNs to continue to optimize the use of HIT beyond the initial implementation.

## Assure Access to HIT Workforce

There is also a shortage of HIT Workforce. Some estimate the shortage in the range of 40,000 HIT workers over the next five years. Under the Stimulus Act the Department of Labor recently awarded \$225 million in grants for the training of the healthcare and HIT workforce. <http://www.hhs.gov/news/press/2010pres/02/20100212a.html> By utilizing the resources of a HCCN, health centers can meet the challenges faced by the lack of an HIT workforce.

## Due Diligence

Health centers should always conduct their own due diligence when purchasing services and this applies to HCCNs as well. There are approximately 55 HCCNs across the country. These HCCNs support almost every EHR system currently used by health centers.. Some HCCNs support a number of EHR products for their members to choose from. HRSA's HIT Toolkit provides tips on due diligence when selecting an HCCN.<sup>9</sup>

<sup>9</sup> These tips can be found at [http://healthit.ahrq.gov/portal/server.pt?open=512&cobjID=1135&mode=2&pid=DA\\_1234842&cid=DA\\_1234884&p\\_path=/DA\\_986294/DA\\_1013273/DA\\_1234842/DA\\_1234884&pos=](http://healthit.ahrq.gov/portal/server.pt?open=512&cobjID=1135&mode=2&pid=DA_1234842&cid=DA_1234884&p_path=/DA_986294/DA_1013273/DA_1234842/DA_1234884&pos=)

## RECOMMENDATIONS

### For Governing Boards

- ◆ View investment in technology as a long-term investment in quality improvement.
- ◆ Work with health center leadership to develop quality reports that are uniform and meaningful in guiding clinical and resource decisions.
- ◆ Become knowledgeable about the benefits of participation in a HCCN.

### For Administrative Leadership

- ◆ Make technology investments and decisions based upon clearly articulated quality improvement goals.
- ◆ Align clinical, financial and administrative goals for the organization.
- ◆ Access appropriate expertise in planning and implementing technology and promoting clinical leadership.
- ◆ Allocate resources and provide sponsorship for performance improvement.

### For Clinical Leadership

- ◆ Establish an infrastructure to support adoption of clinical standards and to set clinical goals and measures.
- ◆ Utilize national evidence-based standards.
- ◆ Become knowledgeable enough about technology to make informed decisions.
- ◆ Recognize that EMR and HIT adoption involve significant change and require long term effort and commitment.

### For Policy Makers

- ◆ Health centers and HCCNs can serve as a model as early adopters and providers working towards quality of care with current focus on meaningful use.
- ◆ HCCNs should be an integral component of all Regional Extension Center programs
- ◆ HCCNs should be recognized as viable options for providers outside of the health center world especially for small provider offices and providers serving other underserved populations such as free clinics and community mental health centers

***“Due to the rapid and fundamental changes in the health care environment, it is neither desirable nor acceptable for health centers to operate in isolation.”***

From the Bureau of Primary Health Care, DHHS, overview of the Integrated Services Delivery Initiative (ISDI)

## CASE STUDY #1:

### HCCN Training of Clinics to Achieve a Culture of Quality Improvement

From 2006-2007, the Redwood Community Health Coalition (RCHC) developed a training program targeted at health center leaders to accelerate the development of a culture of quality improvement through all levels of the health center – clinical and operational, financial and human resources, management and leadership, providers and support staff. The curriculum design was based on a decades-old program developed at Intermountain Health Care, in Utah by Brent James, MD, and modified to be more specific to the unique features of health centers. Some aspects of the curriculum include:

- Series of four, 2 day seminars, spread 1-2 months apart.
- Required participation of health center leadership team – CEO, COO, CMO, QI coordinator.
- Completion of a quality improvement project over the course of the series, presented to their peers at the last session.
- Curriculum including didactic and hands-on training in core principles of quality improvement.
- Health center participation in planning customized curriculum.
- Inclusion of peer education: leaders from coalition health centers presented selected topics/projects to their peers.

A program evaluation showed substantial improvement in organizational capacity for quality improvement activities and an increased readiness for a network implementation of an EHR solution. (Summary of the program available through RCHC: [dpaul@rchc.net](mailto:dpaul@rchc.net) )

The District of Columbia Primary Care Association adapted the curriculum developed by RCHC and put on its own training program in 2008-2009. A detailed evaluation of this program is in progress.

## CASE STUDY #2:

### Integration of Population -Level Performance Measures into a Commercial Electronic Medical Record (EMR)

The Alliance of Chicago Community Health Services is a HCCN founded by four large diverse health centers in Chicago. The health centers had a vision for EMR implementation that included clinical decision support and population level reporting similar to that provided through PECS, but delivered through an EMR. The aim was to have data collection integrated with care delivery in real time to improve efficiency and provide access to clinical decision support at point of care.

With federal support and in partnership with the American Medical Association, GE Healthcare, and the Health Information Management Systems Society, the Alliance worked with measure developers, clinicians, and users to select appropriate evidence- based guidelines, specify the measures in terms of data elements to be collected through the EMR, design end-user screens for collection and presentation of data and related decision support, and develop algorithms in a data warehouse to analyze and report on the measures

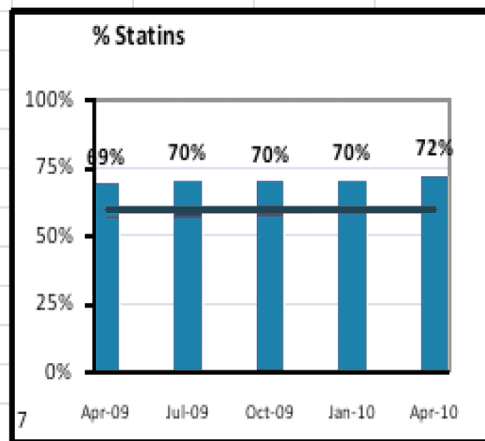
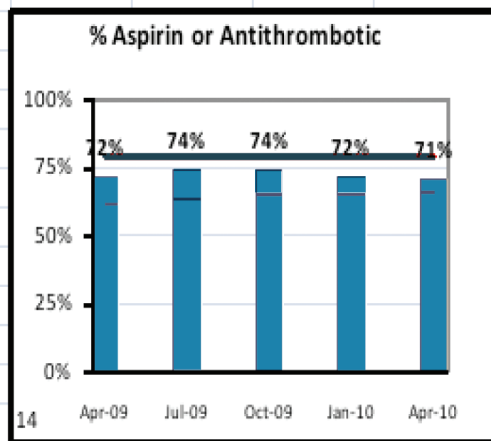
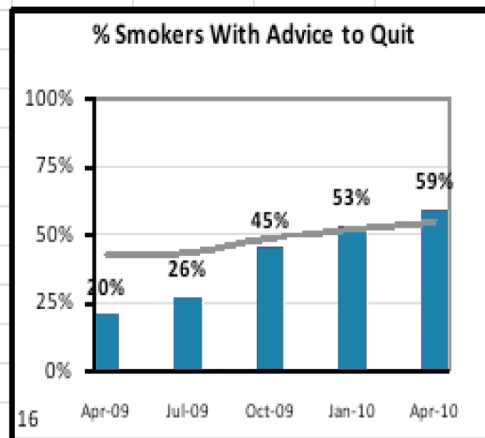
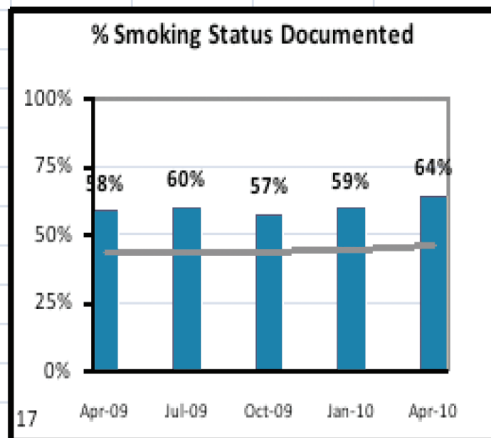
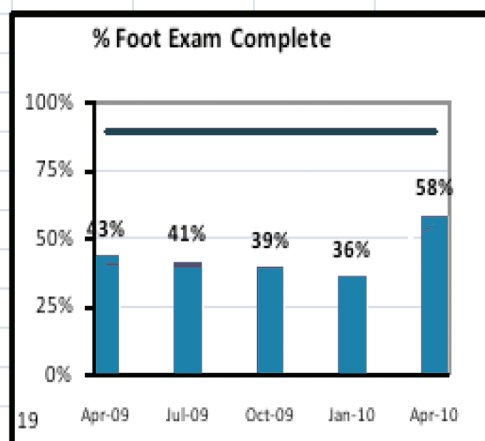
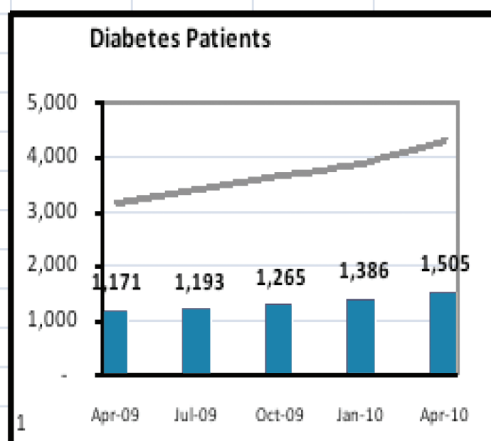
**Clinical dashboards** are used to:

1. Graphically display the data on the measures, showing performance over time and compared to other centers and national performance standards.
2. Promote performance improvement initiatives at a population level, a health center level, and by individual providers.
3. Direct HCCN-level research and improvement initiatives.
4. Allow health centers to share approaches associated with higher performance on individual measures.

Page 15 is an example of a dashboard for diabetes:

**Alliance of Chicago Community Health Services**

Health Outcomes Dashboards - sample of Diabetes measures





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