Meaningful Use:
Lessons Learned on the Path to EHR Excellence in Ambulatory Care

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December 2010

About the Authors

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The **California HealthCare Foundation** works as a catalyst to fulfill the promise of better health care for all Californians. We support ideas and innovations that improve quality, increase efficiency, and lower the costs of care. For more information, visit us online at www.chcf.org.

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I. Introduction

MANY MEDICAL PRACTICES AND COMMUNITY health centers will soon have an opportunity to begin collecting substantial payments for "meaningful use" of electronic health records (EHRs) under the American Recovery and Reinvestment Act of 2009. Billions of dollars in Medicare and Medicaid incentive payments ("the carrot") will be available, with the first payouts expected in April 2011.[1] Although the program is voluntary, there are also penalties—in the form of reduced Medicare or Medicaid reimbursements—for not participating ("the stick").

What Is "Meaningful Use"?

Provisions in the American Recovery and Reinvestment Act of 2009 include the Health Information Technology for Economic and Clinical Health (HITECH) Act. Through incentives and penalties, HITECH seeks to accelerate the adoption of health information technology, specifically EHRs.

Chief among the 25 "meaningful use" performance measures in HITECH are e-prescribing through an EHR (for eligible professionals), electronic exchange of patient information to improve the quality of health care, and submission of clinical quality and other measures to the Centers for Medicare & Medicaid Services.[2–3]

Despite these incentives and penalties, health care providers may lack the knowledge and skills they will need to implement EHRs successfully. Fortunately, there are opportunities for them to benefit from the experience of peers who have already achieved this milestone and, as a result, are seeing improvements in health care efficiency, quality, and safety.

In this report, medical practices and community health organizations recognized for excellence in EHR implementation share their first-hand accounts of, and key insights about, EHR adoption, particularly the challenges they encountered and the solutions they engineered. All of the organizations—ten independent medical practices and six community health organizations—won the Nicholas E. Davies Award of Excellence from the Healthcare Information and Management Systems Society between 2004 and 2009. (See Appendix B for more information about the awards and winners.)

Among the questions for interviewees were these:

1. Where are you now? Since winning the Davies Award, what have been the key modifications to your system? What has been the effect on the culture, the practice of medicine, the workflow, and operational, financial, and clinical outcomes?

2. Describe your journey toward meeting meaningful use. What is your advice for others?

3. Is your organizational strategy well aligned with the expectations of meaningful use?

4. How have the financial incentives and penalties affected your organization's strategic plan?

II. Findings

T HE FOLLOWING SECTIONS SUMMARIZE MAJOR themes that emerged from the interviews. The first section focuses on perceptions of the meaningful use incentives and penalties—why and to what extent they are spurring action by providers. Subsequent sections discuss other drivers of EHR implementation, the technical and other challenges early adopters have encountered, and how they have solved problems along the way.

Incentives and Penalties

Interviewees represented a range of independent practices and providers—from solo practitioners to members of large group practices, primary care physicians, and specialists.[4] Although their views on the meaningful use incentives and penalties varied, many noted that these were not the chief factors driving them to implement EHRs and other health information technology. Rather, they see incentives as a reward for what they would be doing anyway: deploying such technology to achieve business objectives and improve health care delivery.

Parallel Tracks

For example, at Wayne Obstetrics & Gynecology in Jesup, Georgia, seamless electronic communications with the local hospital and elimination of paper records have long been goals. "Now, as meaningful use comes along, bonus—I'm already going in that direction," said Jeffrey Harris, M.D.

Meaningful use also parallels the mindset and activities at Evans Medical Group in Evans, Georgia. All along, according to Rob Lamberts, M.D., the practice has built a culture of clinical efficiency, looking for ways to improve not only efficiency but also the quality of health care and patient satisfaction. For Evans and other practices, financial rewards for meaningful use are simply icing on the cake.

Four of six Davies Award winners in the community health organization category indicated that incentives are certainly a welcome, though not the primary, driver; the money will help offset expenses they have incurred to adopt EHRs. Many of these organizations are federally qualified health centers (FQHCs), which, due to the large number of Medicaid patients they serve, automatically qualify for Medicaid incentives. The incentives could also reinforce progress to date on leveraging electronic information tools, motivate staff, and signal to leaders the importance of these efforts.

Even well-compensated specialists in larger, procedure-based practices, including cardiologists and orthopedists, believe that financial incentives are worth pursuing.

"I'd like to meet the physician who can walk away from $44,000," said Scott Hessen, M.D., at Cardiology Consultants of Philadelphia. "I don't know any. [This] is a nontrivial amount of money over a couple of years, especially if you're close [to achieving meaningful use]. Now, I might feel differently if we hadn't started this effort a while ago and this was entirely all new stuff. Maybe we would, but the leadership in our practice is like, 'We're counting on being there. We're going to be there and we're going to get this money.'"

Potential Downsides

Interviewees noted that "the stick" could have negative consequences. Penalties, they warned, will put more pressure on small, narrow-margin practices,

where the bottom line always receives close scrutiny, and simply add another layer of bureaucratic hassle. Some are skeptical that incentives will ever actually come to fruition. Others, like Sam Lederman, M.D., at Palm Beach Obstetrics & Gynecology in Lake Worth, Florida, think the whole incentives structure is unfair for providers with few Medicare or Medicaid patients.

"Why not engage everybody?" Lederman said, arguing that even if incentives were smaller but geared to a larger range of providers, society will greatly benefit from valuable EHR data — for health care, government financing, research, and other purposes. "I think practices like ours will be discouraged. I think that probably people will break down and move toward electronic records simply because they don't want to be penalized."

Lederman also worries that the threat of penalties will prompt "bad physicians" to seek "the cheapest alternative" requiring the least amount of training. "And that's how everyone loses," he said, "because if people are not really willing to invest the time and effort, then we're not going to have good data."

Because the Virginia Women's Center in Richmond has relatively few Medicare and Medicaid patients, incentive payments would total about $1.4 million over five years, said Kay Stout, M.D. That amount is enough to "take some sting away," she said, but not enough to steer major decisions or significantly alter the bottom line at a corporation with $30 million in annual revenues.

Challenges

Health care providers that have not yet embarked on the EHR journey or are just setting out face some potentially daunting challenges, not all of which are internal. For example, a common complaint among interviewees was that EHR vendors could not meet their particular quality-reporting needs. Or a practice may have e-prescribing capability, but other entities with which it interacts do not.

One of the biggest internal challenges may be technologically aligning an organization with the requirements for meaningful use.

Alignment and Evolution

Davies Award winners and other providers already using EHRs could have an advantage in terms of collecting incentive payments: Most or nearly all of the heavy lifting is done. Interviews revealed that the ten medical practices are already aligned with 80 percent to 95 percent of the meaningful use objectives. The six community health organizations also are well-aligned: One has met all of the goals, one can meet them if its EHR gains certification, one has only a few more to meet, two are aligned with at least 80 percent of the objectives, and one is halfway or more of the way there. The interviewees all agreed that reaching these current levels would be much more difficult now had their organization not evolved over the years to become a mature health IT entity.

Even for veteran EHR adopters, however, gaps still remain in e-prescribing and other areas. And trade-offs will be necessary.

"No matter what system you put in, no matter how you choose to implement it—and there are many ways that can make you successful—no matter which path you choose, the path is not going to be easy," said Sam Goldstein, M.D., at Sports Medicine & Orthopedic Specialists in Birmingham, Alabama. "But the end result is going to be an improvement both in their ability to deliver quality care… and the time that it takes for them to deliver that care.

"Electronic health records do make you inefficient in certain areas," Goldstein added, "in the sense that it may take a little bit more time for someone to enter that data on the front end. But the quality of data that you have is so much greater than you had before, and [so is] the accessibility and the ease of accessing that data—not just from outside your office but from within your records.… Those efficiencies are going to more than make up for the inefficiencies of… the system."

Tip on Structured Data
Lots of oversight is necessary to make sure clinicians and others enter structured data, such as blood pressure and A1c readings, into the EHR. Otherwise, it may be difficult to retrieve information.

Furthermore, as many Davies Award winners have noted, implementation never really ends.

"It's a big project," said Tim Barker, M.D., chief medical officer at Heart of Texas Community Health Center in Waco." Like you're pushing a rock up a big mountain, and you don't know how high the mountain is." After 12½ years, he said, "we're still really in the implementation stage, when you think about it, because we're always looking at new features, changes to the system, making it better. It's a tremendously better system than it was 12 years ago, and five years down the road, it's going to be a tremendously better system than it is now."

Urban Health Plan, Inc., is another organization that has evolved technologically to stay ahead. At its facility in Bronx, New York, a small camera biometrically matches incoming patients to their records in the EHR within seconds, based on iris pattern, which is more unique than a fingerprint. Integrating this technology into the patient flow streamlines clinical functions, eliminates the need for patient ID cards, and virtually eliminates misidentifications, generating significant savings in cost and time. Urban is pilot testing a thermal imaging camera that screens patients for fever as they enter, enabling feverish patients to immediately be segregated from healthy ones.

Check-in is also faster at White River Rural Health Center (now ARcare) in Augusta, Arkansas, thanks to self-serve, Web-based kiosks linked to the EHR that have eliminated paperwork and reduced front-desk traffic by 40 percent. Using the kiosks, patients can update all of their personal information, including medical history, changes in insurance, and pharmacy preference.

At Cardiology Consultants of Philadelphia, 40 different kinds and strengths of generic medicines are available from in-office dispensers integrated with the EHR. This alternative to e-prescribing is convenient for patients and yields a small profit for the practice, given how inexpensive generic medications have become.

Change Management and Leadership
Switching to EHRs from paper records entails big changes that can be difficult for medical professionals and staff. They may be quite comfortable with the current workflow and, apart from the meaningful use

expectations and incentives, not see any reasons to modify it.

Implementing an EHR is like learning how to ride a bike, said Barker, at Heart of Texas Community Health Center. "You can spend some time to learn to ride it, learn to ride it well. You can go faster further and it's more fun to get there. Or you can tie a rope on the bicycle and drag it.

"Thankfully, about 98 percent of our staff really learned to ride the EHR bicycle and really embraced that, and it helps them do a better job," Barker said. "They enjoy the job more. And then we probably had that 2 percent who just kind of tied a rope to it, and it was a burden to them."

For Jeb Weisman, chief information officer at the New York Children's Health Project in New York City, "Change management isn't people's willingness to accept it, but…packaging it in a way that is rational and that makes sense to people. Once people understand what needs to happen and why it needs to change, [they] are great about it. And they're remarkably resilient. Leadership has been about understanding, interpretation, and, ultimately, how we will tactically approach it."

Weisman said change management and process re-engineering at the health project entail two different areas of focus: the clinical environment and the office environment, which tends to be more about broad-based operational regulations and rules. He characterized such re-engineering as "an ongoing, never-ending issue"—one the organization is "constantly revisiting."

Vendors and Products

There is wide variation in EHR systems and, as interviewees found, none are perfect. Realizing that "perfection is not present in any of these systems would have been helpful…up-front," said Stout, at Virginia Women's Center. All the more reason, she added, to thoroughly investigate an EHR system and find out early on how it will interact with other products.

Providers often have enough in-house expertise to fill a software gap with their own programming solution. In other situations, they familiarize a vendor with the workflow, targeted outcomes, and other factors so the vendor can customize its product accordingly for greater impact.

Tips on Vendors

- Red flags: vendors who confidently claim that their product will operate smoothly with others, or say, "Well, it ought to be able to work."
- EHR functions that specifically meet the organization's current and future needs are the most important. These functions may not be the same as those that meet meaningful use criteria.
- Buy a certified EHR system.
- Maintain a good relationship with vendors and become a partner with them.

Lederman, at Palm Beach Obstetrics & Gynecology, said that, in retrospect, he would have asked vendors about other sites with EHRs for him to visit and "just hang out for two or three days" and learn as much as possible. "That's going to make the effort a lot simpler," he said. "I wish I had gone and just copied somebody else's templates and workflows and the way the [EHR] is set up and all the things that go along with it."

E-prescribing

Software upgrades, Medicaid regulations, and reluctance to switch from faxed prescriptions are among the reasons that e-prescribing at Davies Award-winning sites is still a work in progress. However, the advent of meaningful use is spurring them to pick up the pace and achieve this objective by the end of 2010.

For example, Heart of Texas Community Health Center in Waco was upgrading its EHR software to a spring 2009 version, the first version to meet meaningful use certification standards. Another bump in the road there has been state Medicaid regulations regarding the 340B Drug Pricing Program, through which Heart of Texas obtains medications for Medicaid patients.[5] To be a full-service pharmacy for such patients, the health center had to obtain another pharmacy license and build another, completely separate facility so the 340B and non-340B inventories do not mix. Its EHR software upgrade will accommodate these workflow changes.

Columbia Basin Health Association in Othello, Washington, is confident it will easily meet the meaningful use e-prescribing requirement in the first quarter of 2011. By then, the three-clinic association, which has an in-house pharmacy, will have upgraded its pharmacy management system, enabling not only e-prescribing but also screening for drug interactions, drug allergies, and compliance with formularies. Columbia Basin's current e-prescribing capability has already paid off—for example, by streamlining workflow during the H1N1 swine flu outbreak in 2009. Its 19 providers treated 236 walk-in patients in a single day, far more than usual. Thanks to electronic capabilities (chart notes, lab orders and results, and prescription orders), Columbia Basin handled the surge efficiently. That day, it filled more than 1,200 prescriptions; filling even half that amount by conventional means would have been impossible. In addition, the association was able to quickly transmit its flu-related data to public health authorities.

Work on e-prescribing is also still under way at Evans Medical Group. The group is using limited e-prescribing (and faxing when e-prescribing is not available) because their EHR vendor did not have full advanced e-prescribing available when Evans first implemented its EHR (in 1996). As full e-prescribing functionality became available, workflow issues were a barrier to full adoption. Currently, the formulary check and the medication list check are not included as part of the e-prescribing functionality, but will be "live" in January 2011. Meanwhile, Evans has begun ordering lab tests and receiving the results electronically, through a third-party application integrated into its EHR. Providers can query the system to learn the status or results of lab tests, consults, or preventive-care tests, such as colonoscopies and mammograms.

Progress at Palm Beach Obstetrics & Gynecology has been considerably slower. The sheer volume of prescriptions there would impede efficiency if they were sent electronically. An e-prescription takes 45 seconds longer than the traditional paper prescription and is more burdensome than one might think, the group's Lederman said. Multiply that number by a dozen or two prescriptions and the total equals minutes that could have been spent seeing another patient or getting to surgery on time. Refills are easier, he said, because his nurse reviews requests, then he authorizes a block of ten or 15 simultaneously. E-prescribing "is the first thing that goes" if he is running late, said Lederman.

At Virginia Women's Center, constraints on e-prescribing have been related mostly to software updates. Nevertheless, meaningful use is pushing it toward full e-prescribing by year end.

Quality of Care

The reporting of quality measures is a key motivation behind the push for meaningful use. For Michael Spain, M.D., at Cardiology of Tulsa in Oklahoma, it is *the* motivation. Doctors have long talked about the need for quality-of-care reporting, he said, but few have actually done it. Physicians at his practice cannot check out of the EHR system and submit a claim until they have answered quality-related questions imbedded in the check-out process.

Meaningful use criteria for quality reporting and other EHR functions will become increasingly more demanding over time. In stage 1 (2011 and 2012), providers need only "attest" that their EHR meets certain objectives. In stages 2 and 3 (2013 and beyond), EHRs must be able, among other things, to submit quality data directly to the Centers for Medicare & Medicaid Services. However, without customization, EHR software generally has not yet evolved to the point that these data can be submitted directly.

Data warehouses help ease the capture and reporting of quality data. The Community Health Access Network in Newmarket, New Hampshire, has enhanced what used to be a rudimentary data warehouse to facilitate reporting by its five community health centers. Enhancements include standard definitions of clinical terms for predefined fields in EHR quality reports, eliminating the need to write definitions each time. In addition, the reports now use simpler language and are Web-based so other health centers in the network can drill down to and collect patient-level data for the purpose of improving outcomes.

Better outcomes were a goal at Heart of Texas, too, after the community health center realized it needed to boost childhood immunizations. It redesigned workflow to incorporate immunization-related clinical decision support into the EHR.

The system sends feedback to nurses about their performance in this regard, highlighting missed opportunities to vaccinate. Childhood immunization rates at Heart of Texas are now much better than state and national averages. Indeed, its successful efforts have become a model for others.

The health center also realized that diabetes care was inadequate. EHR-connected patient registries for diabetes and other conditions have been key in improving care at Heart of Texas. They help providers manage and ensure timely follow-ups, which are essential for determining if, for example, diabetic patients need a lipid panel, foot exam, or A1c hemoglobin test to assess average blood glucose control in the previous two to three months.

Another paragon of quality is Columbia Basin Health Association, which boasts this mantra: "If we can measure it, we can manage it." Before Columbia Basin adopted EHRs, quality improvement was a matter of occasionally extracting 10 percent of patient data from each provider's paper charts as a sample. The EHR system enables extrapolation and analysis of all data all the time. These transparent data, in turn, drive performance, said Greg Brandenburg, the association's chief executive officer.

"So when we say, 'OK, how come Dr. X's referrals for diabetic eye exams are so low?' we'll go and ask him," Brandenburg explained. "We have an in-house eye clinic with an optometrist. 'Why didn't you refer those patients?' It's another department within our organization, so referring those patients to us is a revenue generation source. When you post this information, providers are competitive and want to be the best."

Southeast Texas Medical Associates in Beaumont has not sat on its quality laurels since the medical group won a Davies Award in 2005. It continues to improve patient outcomes by advancing EHR clinical decision support at the point of care. For example:

- Twelve different risk scores from the Framingham Heart Study have been incorporated into the EHR so providers can assess, within one second, a patient's pre-determination for cardiac problems, including congestive heart failure, general cardiac disease, and stroke;[6]

- The EHR enables clinicians to track the quality of care they provide to individual patients based on the National Committee for Quality Assurance's Healthcare Effectiveness Data and Information Set (HEDIS), measures by the National Quality Forum, Physician Consortium for Performance Improvement, Ambulatory Quality Alliance, and Physician Quality Reporting Initiative;[7]

- Cognos, a type of business intelligence and financial performance software from IBM, enables daily audits of entire panels of patients, be they diabetics or patients with hypertension; and

- Through statistical analysis, the group practice tracks and corrects deviations in diabetes care. Between 2000 and 2010, data showed progressive improvement each year in results from A1c hemoglobin tests. Between 2008 and 2009, the improvement at clinics was 9 percent and, among individual clinicians, as much as 16.5 percent.

On its Web site, Southeast Texas Medical Associates reports the performance of each clinician based on 200 quality measures.

Health Information Exchange

All of the interviewees said their organizations had achieved some degree of health information exchange and were still working on this capability to meet the requirements in later stages of the meaningful use timeline. Such exchange poses software compatibility and myriad other challenges, both internally and externally. Patient registries are a prime example.

In New Hampshire, the Community Health Access Network could electronically submit data to a state immunization registry — if one existed. The New York Children's Health Project, according to Weisman, sometimes has "the material or the physical capability in our system, but there's no one to play with on the other end." The health project's system was not compatible with the state registry, so it built middleware to bridge the gap.

Heart of Texas Community Health Center has online access (separate from their EHR) to ImmTrac, the state immunization registry, but patients must sign a form allowing their information to be released.[8] For efficiency reasons, Evans Medical Group had decided at one point to limit the amount of childhood immunization data it would enter into its EHR and instead send the bulk of data to the Georgia Registry of Immunization Transactions and Services (GRITS), a more efficient tool and one to which all providers in the state have access. But to qualify for meaningful use, Evans must now go back and enter the entire data set into its EHR, despite the duplication in GRITS.

Beyond these difficulties, an issue for Spain at Cardiology of Tulsa is the utility of the particular information that meaningful use will require to be exchanged. The emphasis on medications, drug allergies, problem lists, and so on is not helpful, he said, when one of his heart attack patients has just had a stent implanted and he needs more detailed information from the hospital.

"What I need to know," said Spain, "is what kind of stent it was, was it drug-coated, how big was it, what's the final diameter, what's the length…. I need a copy of their cath report." He added: "The industry is setting the bar too low, and that's about as far from meaningful use as I can imagine. [What matters is] the exchange of meaningful clinical information that

my partners need when they take care of my patients in the middle of the night when I'm not there."

Another important exchange function is the flow of information between providers and laboratories. Members of the Community Health Access Network, which have received stimulus funds under the American Recovery and Reinvestment Act, pooled their resources to upgrade their EHR and practice management systems. The upgrade will replace manual reconciliation of lab orders and results with electronic reconciliation, a much more efficient method. In addition, the network has a grant from the Health Resources and Services Administration to build a master patient index for integration into the EHR. This index will enable outside entities to exchange patient information with Community Health Access Network.

Heart of Texas Community Health Center exchanges information electronically with a local pathology lab. However, because it cannot share lab data with Texas due to a technological shortfall on the state's end, Medicaid-related lab results are paper-based and must be scanned into the EHR. The health center can exchange information with other organizations that have the same software (Care Everywhere), but those with a different EHR system are more challenging. Heart of Texas is working with its vendor to improve the functionality of Care Everywhere.

Patient Portals

Patient portals, which improve health care coordination, are on most of the providers' short list for near-term, EHR-related completion. Columbia Basin Health Association hopes to achieve this goal in the third quarter of 2011, giving patients secure electronic access to immunization, lab, and other information as required under meaningful use.

Lederman, at Palm Beach Obstetrics & Gynecology, recalled that "when we were building our patients' portal, I was very unhappy [with] the way it was coming out. I finally just looked around [at] five, ten different portals from the same vendor, and I said, 'Hey, can you just copy that one? Just change the names, addresses, and phone numbers and make it very similar.' And it was perfect."

The meaningful use requirements prompted Heart of Texas Community Health Center to quicken the pace of completing both its patient portal — a work in progress for about three months, to be launched at the end of 2010 — and e-prescribing capability. Elsewhere, a sticking point at Community Health Access Network for the last six years has been clinicians' skepticism that its functioning portal will in fact reduce the workload, improve efficiency by allowing patients to make appointments electronically and view portions of their medical records online, and facilitate referrals. Currently, the portal is used mostly for prescription refills and management of chronic disease, including diabetes. The network is nevertheless optimistic that clinicians will ultimately see the full value of this patient-centered function.

Patients use the portal at Sports Medicine & Orthopedic Specialists to enter basic personal information ahead of a visit, prompted by questions about their family history. When patients arrive, physicians can review this information during the visit. The portal does not allow online appointment scheduling. Nor does it permit email correspondence; because the results of a visit typically involve more than lab results, a registered nurse or physician telephones the patient to discuss their situation, and notes this communication in the EHR.

The portal at Evans Medical Group is more dynamic. It enables patients to see lab and other test results online after they receive email notification,

which is more efficient and less expensive than sending results on paper through the U.S. Mail. Better yet, the medical group can track which patients have viewed the results within a specified time period, and, for those who have not, close the loop by following up with a letter. In addition, patients can complete paperwork online — for example, update their insurance and demographic information — and request appointments.

A future goal at Evans is to leverage portal power even further by enabling patients to query clinicians directly. However, Lamberts said this capability warrants caution for at least two reasons: "If you have patients requesting something and you have not set up adequate systems to make sure that it gets listened to or…looked at, then you could miss very important stuff." Second, according to Lamberts, e-consults are generally not reimbursed, even though they "would be far more efficient a lot of times" and he would like to do them.

III. Conclusion

WITH BILLIONS OF DOLLARS IN FEDERAL incentives soon to begin flowing, health care providers have a prime opportunity to leap the EHR cost barrier and embrace powerful information technologies. The path toward adoption and meaningful use of EHRs entails many challenges, as the Davies Award winners cited in this report can attest. But they all agree it is worth the effort for the right reasons — more efficient, higher quality, and safer health care — and that financial payments are helpful but secondary.

The experiences and observations of interviewees raise some important issues worth considering:

- Can the meaningful use initiative fully achieve its mission if the bulk of federal dollars are targeted primarily to health care providers that serve substantial numbers of Medicare and Medicaid patients?

- Some technology-related gaps, such as incompatible or nonexistent immunization registries, are beyond the control of providers. Who will fill these gaps and how?

- Is the timeline for achieving meaningful use realistic in light of the years it has taken award winners to reach their current level of EHR sophistication?

- Do providers new to the EHR arena have all of the resources they need to overcome hurdles and meet meaningful use expectations?

The meaningful use provisions potentially could go a long way toward realizing the goal of a more cost-effective, efficient health care system. The experiences and insights of early adopters can help inform the health care and policy communities moving forward.

Appendix A: Interviewees

Tim Barker, M.D., chief medical officer
 Heart of Texas Community Health Center
 Waco, Texas

Greg Brandenburg, chief executive officer
 Columbia Basin Health Association
 Othello, Washington

Craig Carson, M.D.
 Oklahoma Arthritis Center
 Edmond, Oklahoma

Alison Connelly-Flores, P.A.-C.
 Urban Health Plan, Inc.
 Bronx, New York

Marcy Doyle, quality assurance coordinator
 Community Health Access Network
 Newmarket, New Hampshire

Sam Goldstein, M.D.
 Sports Medicine & Orthopedic Specialists
 Birmingham, Alabama

Jeffrey Harris, M.D.
 Wayne Obstetrics & Gynecology
 Jesup, Georgia

Scott Hessen, M.D.
 Cardiology Consultants of Philadelphia
 Philadelphia, Pennsylvania

James L. Holly, M.D.
 Southeast Texas Medical Associates
 Beaumont, Texas

Rob Lamberts, M.D.
 Evans Medical Group
 Evans, Georgia

Sam Lederman, M.D.
 Palm Beach Obstetrics & Gynecology
 Lake Worth, Florida

William McClatchey, M.D.
 Piedmont Physicians Group
 Atlanta, Georgia

Sandy Pardus, chief information officer and
 chief financial officer
 Community Health Access Network
 Newmarket, New Hampshire

Michael Spain, M.D.
 Cardiology of Tulsa
 Tulsa, Oklahoma

Kay Stout, M.D.
 Virginia Women's Center
 Richmond, Virginia

Jeb Weisman, Ph.D.
 New York Children's Health Project
 New York, New York

Greg Wolverton, chief information officer
 White River Rural Health Center (now ARcare)
 Augusta, Arkansas

Appendix B: Davies Awards

To receive a Davies Award, applicants must meet stringent qualifications, only one of which is having a solid EHR system in place. On their application for an award and during on-site evaluation by members of the Davies Committee and staff at the Healthcare Information and Management Systems Society, candidates also need to demonstrate:

- The patient care efficiencies they have achieved by seamlessly integrating their EHR system across the continuum of care;

- The real-time clinical decision support in their system, thus enabling the organization to meet quality, efficiency, and safety goals;

- How EHRs play a key role in helping the organization reach its strategic objective;

- That all clinical areas are using EHRs — setting, measuring, and achieving clinical, financial, and operational goals;

- That the organization can mine EHR data and use these data to make informed, proactive clinical decisions; and

- That the EHR system generates cost savings and both hard and soft returns on investment.

In evaluating candidates, reviewers examine their experiences in planning, deploying, and using EHRs, the barriers they overcame, and the lessons they learned and applied along the way as their system evolved. In fact, these kinds of personal stories, substantiated by measurable changes and improvements in patient care, are what distinguish the Davies Awards. Winning entries and more details are available at www.himss.org.

The Awards at a Glance

Origin: In honor of Nicholas E. Davies, M.D., of Atlanta, Georgia, who died in a plane crash in 1991. Davies strongly believed in the power of EHRs to improve patient care.

Inception: 1994

Objectives:

1. Promote EHRs through concrete examples;

2. Understand and share the documented value of EHRs;

3. Recognize and publicize high-impact systems; and

4. Share successful implementation strategies.

Award categories and number of recipients to date:

1. Health care organizations	29
2. Ambulatory care practices	21
3. Public health entities	14
4. Community health organizations	7
TOTAL	71

Location: Healthcare Information and Management Systems Society, www.himss.org.

Table 1, starting on page 15, provides brief summaries of past winners in the ambulatory care and community health organization categories. The other two categories are organizational and public health.

Table 1. Davies Award Winners in Two Categories

Ambulatory Care Award

Launched: 2003

Qualified applicants: Independent, physician-owned ambulatory practices. Range of practices—solo to large multispecialty groups—and specialties. The common thread: all are small, narrow-margin businesses that risked investing in EHRs to improve efficiency and patient care.

PRACTICE	DESCRIPTION	MORE INFORMATION
Cardiology Consultants of Philadelphia Philadelphia, Pennsylvania	The largest cardiology practice in the country, with 21 offices spread across four counties in southeastern Pennsylvania. Its EHR system improved patient care and reduced filing and transcription costs. It also reduced malpractice exposure and costs. The system's analysis of individual and group practice patterns helps improve the bottom line.	www.ccpdocs.com Award application: www.himss.org
Cardiology of Tulsa *(now Warren Clinic Cardiology of Tulsa)* Tulsa, Oklahoma	A full-service cardiology practice that began working toward its technology vision in 1989. The first implementation failed. But the self-described "learning organization" overcame obstacles and used motivational strategies, such as Project CHEARTBURN, to ultimately achieve EHR success. In addition to providing immediate access to patient information, the system has improved workflow and enhanced revenues.	Fact Sheet: www.saintfrancis.com Award application: www.himss.org
Evans Medical Group Evans, Georgia	An essentially paperless practice (paper charts were eliminated in 1998). A database search of its EHR enabled the group to identify patients older than 65 who needed pneumonia immunization. Rates of immunization subsequently increased more than 90 percent. A database search by birthday yielded children between 18 months and 4 years old who needed to be scheduled for regular visits.	www.evansmedicalgroup.com EHR publication: www.himss.org
Oklahoma Arthritis Center Edmond, Oklahoma	The center, located near Oklahoma City, treats patients who have arthritis and related conditions, such as lupus and osteoporosis. It embraces the idea of "single patient, single record" as the best option for patients' health. A goal of EHR implementation was to prepare for integration with the future National Health Information Network.	Award application: www.himss.org
Palm Beach Obstetrics & Gynecology Lake Worth, Florida	A four-physician practice serving a predominantly suburban region. It had a computerized scheduling, billing, and collections system before adoption of EHRs. The system has improved patient care by reducing delays in reviewing lab results and radiology reports, and by making clinical information accessible to providers at night and on weekends—a critically important feature for delivering babies.	www.palmbeachobgyn.com Award application: www.himss.org
Piedmont Physicians Group Atlanta, Georgia	At one point, the weight of paper medical records at this eight-physician internal medicine practice was architecturally unsafe. The practice hired an industrial management firm to analyze workflow and customize the EHR for its particular needs. An online portal enables patients to request appointments, renew medications, get lab results, and consult their physician at any time.	www.piedmontphysicians.org Award application: www.himss.org

Southeast Texas Medical Associates Beaumont, Texas	A three-location, primary care practice that opened in 1995 with five providers, who used transcription to document medical records. Now the practice has three clinical locations and a fully integrated EHR system, 24 physicians, and a staff of 260.	Award application: www.himss.org
Sports Medicine & Orthopedic Specialists Birmingham, Alabama	A four-physician specialty group practice that serves a metropolitan area comprising more than 1 million residents. Its EHR is fully integrated into the busy workflow, which includes sending and receiving digital x-rays. This was the first orthopedic practice to win a Davies Award.	www.orthodoc.aaos.org/bsmos Award application: www.himss.org
Virginia Women's Center Richmond, Virginia	Central Virginia's largest provider of individualized obstetric and gynecologic care, employing 26 physicians and 12 nurse practitioners at five clinical sites. Subspecialties include urology, mammography, bone health, nutrition counseling, mental health counseling, and clinical research. The center's EHR system makes workflow more efficient and enables better management of the revenue cycle. Consequently, average profits per shareholder physician increased 19 percent the first year after EHR implementation.	www.vwcenter.com Award application: www.himss.org
Wayne Obstetrics & Gynecology Jesup, Georgia	A solo practice with more than 6,000 patient encounters per year. It is a model of excellence for small practices in rural settings. The practice considers its EHR to be a distinct asset in the volatile world of obstetrics malpractice.	Award application: www.himss.org

Community Health Organization Award

Launched: 2008 (newest of the four award categories)

Qualified applicants: Safety-net organizations for the uninsured and underserved. In addition to primary care, many provide dental, behavioral, and social services. Award winners' EHR systems must support population-based chronic disease management and share health information across disciplines.

PRACTICE	DESCRIPTION	MORE INFORMATION
Community Health Access Network Newmarket, New Hampshire	A health-center-controlled network supporting five member centers in New Hampshire. They provide primary care services, including pediatric and prenatal; most also provide dental and behavioral health care. EHRs have been vital in improving patient care and outcomes for large populations. With core implementation complete, the current focus is on wrap-around tools that enhance EHR capabilities. These tools include document scanning, a secure portal to facilitate information exchange with patients and other providers, integrated support care devices for vitals and EKGs, chart viewing capabilities for hospitalists and emergency department physicians, and interfaces with numerous hospitals and independent labs.	www.chan-nh.org Award application: www.himss.org
Columbia Basin Health Association Othello, Washington	Comprises three clinics in central Washington that provide many services, including medical, dental, vision, lab, maternity, and behavioral health. Most patients are migrant/seasonal workers and uninsured, with incomes below the federal poverty line. EHRs support the association's philosophy: "If you can measure it, you can manage it."	www.cbha.org Award application: www.himss.org
Heart of Texas Community Health Center Waco, Texas	A federally qualified health center supporting the oldest family medicine residency west of the Mississippi. Its target population: 90,200 residents of McLennan County who live at or below 200 percent of the federal poverty level.	Award application: www.himss.org
New York Children's Health Project New York, New York	A program of Montefiore Medical Center and the Children's Health Fund. The project provides primary care services to homeless, medically underserved, and severely disadvantaged children and families. Health care teams deliver care throughout the city via custom-designed mobile medical units and at on-site shelter clinics. The EHR system is tailored to meet the patient population's specific needs.	Award application: www.himss.org
Urban Health Plan, Inc. Bronx, New York	A network of federally qualified community health centers based in the South Bronx and Queens. Founded in 1974, Urban Health Plan's mission is to improve the health of underserved communities. Its 13 practice sites are within the highest 2 percent of impoverished U.S. counties.	www.urbanhealthplan.org Award application: www.himss.org
White River Rural Health Center (now ARcare) Augusta, Arkansas	Through its primary care clinics, dental clinics, pharmacies, and wellness centers, ARcare treats a diverse patient population in rural Arkansas. Services include education and prevention programs. It adopted EHRs to offer "total care": patient information is integrated across 20-plus sites, enabling greater continuity of care.	www.arcare.org Award application: www.himss.org

Endnotes

1. Medicare and Medicaid incentive programs for hospitals began in fiscal 2010 (as early as October 1) and, for eligible professionals, will start in calendar year 2011 (as early as January 1). Each eligible ambulatory care provider could receive a total of $44,000 per physician over five years (2011–2015) for Medicare and up to a total of $63,750 over six years (2011–2016) for Medicaid.

2. Lowes, R. "CMS Lightens Meaningful-Use Requirements for EHRs." *Medscape Medical News,* July 14, 2010 (www.medscape.com).

3. Bernstein, W.S., H.R. Pfister, and S.R. Ingargiola. *HIGHTECH Revisited.* Manatt Health Solutions, 2010 (www.manatt.com). For more detailed information on meaningful use criteria, *see* Centers for Medicare & Medicaid Services. "42 CFR Parts 412, et al. Medicare and Medicaid Programs; Electronic Health Record Incentive Program; Proposed Rule," January 13, 2010, p.1850 (edocket.access.gpo.gov/2010/pdf/E9-31217.pdf).

4. Qualified applicants for a Davies Award in the ambulatory care and community health organization categories must be independent—that is, not owned by an academic medical center, independent practice association, hospital system, or other entity.

5. Section 340B of the Public Health Service Act limits coverage of outpatient drugs to certain federal grantees, federally qualified health center look-alikes, and qualified, disproportionate-share hospitals. Entities that participate in this program can save a considerable sum on pharmaceuticals. They can save even more by participating in the 340B Prime Vendor Program.

6. This federal study, which began in 1948, has followed generations of participants to identify common factors or characteristics that contribute to cardiovascular disease.

7. For more information about these quality parameters, *see* (a) HEDIS: www.ncqa.org; (b) National Quality Forum: www.qualityforum.org; (c) Physician Consortium for Performance Improvement: www.ama-assn.org; (d) Ambulatory Quality Alliance: www.ambulatory qualityalliance.org; and (e) Physician Quality Reporting Initiative: www.cms.gov.

8. Few patients express privacy concerns, and in only one of about 50,000 cases has a patient refused to grant permission.