Moving Ahead: EMR-EHR Drives Ambulatory Care

In 1994, the Computer-based Patient Record Institute founded the Davies Awards of Excellence and managed the program until merging with the Healthcare Information and Management Systems Society (HIMSS) in 2002. The award has annually highlighted healthcare providers who successfully led efforts to transform their organizations through technology, with the award largely focusing on the implementation of healthcare information technology (IT) in larger institutions, ranging from rural health systems to big city hospitals.

The awards are named in honor of Dr. Nicholas E. Davies, an Atlanta-based practice physician committed to the ideal of improving patient care through better health information management. As a member of the Institute of Medicine's Patient Record Study Committee, Dr. Davies helped coin the term "computer-based patient record," now more widely known as electronic medical records and electronic health records (EMR-EHR). A tireless advocate for IT solutions, Dr. Davies was chairperson-elect of the American College of Physicians when he was tragically killed in a plane crash with Senator John G. Tower of Texas in April, 1991. His spirit lives on in the Davies Award of Excellence.

In 2003, HIMSS extended the awards to include ambulatory practices with EMR-EHRs and in 2004 added yet another category for public health. Sponsored by HIMSS, the Nicholas E. Davies Award Program encourages and recognizes excellence in the implementation of EMR-EHR systems through showcasing concrete examples, understanding and sharing the value of EMR-EHR systems, offering visibility and recognition for their projects, and sharing successful implementation strategies.

The papers are evaluated in terms of EMR-EHR implementation, strategy, planning, project management, and governance. The clinicians who submit entries discuss the functionality of their EMR-EHRs and how those systems met the needs of staff and patients. Additionally, they speak to how the technology design works to bring about the desired functionality and the institutions' return on investment.

The purpose of this white paper, and the three others in this collection, is to give healthcare providers solid examples of leadership, a survey of best practices in EMR-EHR implementation, and a glimpse at the return on their investment the EMR-EHR offers.

Unlike the others in the series, this paper focuses on smaller primary and ambulatory care practices, some of which are among the most innovative at adopting and utilizing electronic medical records in the healthcare industry. These organizations also tend to show hard bottom-line returns on investment (ROI) more clearly and rapidly than do their institutional counterparts.

The ambulatory care practices surveyed include **Old Harding Pediatrics Associates** in Nashville, TN; **Wayne Obstetrics and Gynecology** in Jesup, GA; **Southeast Texas Medical**

Associates in Beaumont, TX; **Sports Medicine & Orthopedic Specialists PC** in Birmingham, AL; **Cooper Pediatrics** in Duluth, GA; **Riverpoint Pediatrics** in Chicago, IL; **Pediatrics @ the Basin** in Pittsford, NY; **North Fulton Family Medicine PC** in Cumming, GA; **Evans Medical Group** in Augusta, GA; and **Roswell Pediatric Center** in Alpharetta, GA.

Leadership and Implementation

In ambulatory and primary care, the issues of EMR-EHR leadership and implementation are closely intertwined. Clinics have smaller staffs, and implementing IT systems demands the cooperation and input of nearly everyone who eventually will "touch" the applications. In one notable case, even patients themselves—obviously, the primary stakeholders—were included as EMR-EHR project leaders.

That was at **Old Harding Pediatric Associates** in Nashville, TN a two-site practice that cares for 23,000 patients, employs 14 physicians and 80 nurses and support staffers, and runs a moderately complex laboratory unit at both of its facilities. Upon embarking on its EMR-EHR project, the primary objective was to enhance patient care while experiencing no dip in the quality of care during project implementation. "If this goal could be accomplished, then we realized we could improve physician and office staff efficiency, improve patient satisfaction, and increase office profitability," writes Executive Administrator Brenda Plunkett, who submitted Old Harding's Davies application.

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>
> *Old Harding Pediatric Associates*

Old Harding assembled an implementation team comprising a physician, a nurse, the executive administrator, and assistant administrator to search for an appropriate IT system and to coordinate its implementation. An outside contractor was brought in to serve as technical leader.

The project moved forward in three phases, beginning with the educational "Compassionate Care 2000" campaign (March 2000), which focused staffers' attention on the new incoming technology and on related issues of research, quality assurance, and ongoing technical education. In August, 2001, the second phase kicked off with the formation of a strategic planning committee that involved representatives from every area of the practice—including patients. It was at this stage that goals and a clear vision for the project were enunciated, along with needed process improvements. The annual director's retreat in October, 2001 marked the beginning of the third phrase. There, directors reviewed the strategic planning report and established an aggressive, one-year EMR-EHR implementation schedule.

The implementation team then began looking into various software packages, viewing many products and demos and taking into consideration physicians' preference for a system that resembled their familiar paper charts as well as their need to interface with its billing system; they chose one that fit the bill. Then, six weeks before going live, Old Harding launched a practice management system—the first interface between the two systems—a move that forced front office staff to learn two new systems in six weeks' time.

On the week of the EMR-EHR go-live, every staffer underwent intensive training. That crunch-time training succeeded. By the fourth day after the system went live, Old Harding achieved a 100 percent adoption rate for EMR-EHR use among all staffers.

The Old Harding experience is relatively representative of the leadership imperatives and implementation styles among ambulatory clinics. But there are a number of other noteworthy examples of implementation leadership among Davies award winners. A few others include:

• **Southeast Texas Medical Associates, LLP**, of Beaumont, set as its primary objective a move from a reliance on paper to an electronic system. After determining that twenty-first century medicine, and its own growth, would require data management instead of document management, the practice in 1997 purchased EMR and enterprise practice management systems. The rollout was marked by tight collaboration between the technical support team and care providers. "Decisions were made early that our implementation of the [EMR-EHR] and construction of templates would be by consensus rather than individualized," writes CEO James L. Holly, who notes that this approach promoted both the standardization of care and documentation. "This is probably the most important decision we made and is one that directly impacted our success."

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> *Sports Medicine & Orthopedic Specialists PC*

• **Sports Medicine & Orthopedic Specialists PC**, of Birmingham, AL, learned some of its lessons the hard way. The practice, which has 19 staffers and 20,000 annual patient encounters, decided to introduce EMRs in early 2002, implementing an EMR-EHR by October, 2003. Its goals included eliminating $1,800 per month in transcription costs and making charts available electronically. All employees were to be held accountable for the system's success. But problems soon surfaced. The system originally interfaced with the group's UNIX-based billing system, which was not HL7-compliant—meaning there was no two-way transfer of information between them. The wireless network also was problematic: IT providers had trouble avoiding crossover signals from two other existing wireless systems in the building. But the biggest problem was the managing physician's decision not to reduce patient load during the EMR-EHR's go-live phase. "Like lambs being led to slaughter, we had no idea what we were really facing," writes application author Samuel Goldstein, MD. In fact, the caseload should have been reduced by half, Goldstein declares, and within days, it was significantly reduced. For the first week, staffers struggled mightily to adjust to the new system, working long hours until, by Wednesday of the following week, "mutiny was imminent." An emergency meeting was held and a decision made not to abandon the system and instead press ahead "and get the bad days over with." After six weeks, the practice was back to seeing its normal number of patients, and staffers were finally going home for the day on time.

• **Wayne Obstetrics and Gynecology** of Jesup, GA, was founded in 2003 as a solo physician practice; at the time of its application, it had only nine staff members. The decision to implement EMRs was made prior to establishing the practice. According to Jeffrey L. Harris, MD, the author of Wayne Obstetrics' Davies application, the purchased system was selected because it was the only one he could find that was based on a workflow management system that customizes and streamlines staff and physician collaboration. By October, 2003, the practice was ready to launch the EMR-EHR; staff training began a week prior to the go-live date. By the third day, the entire practice staff was able to use the system. The practice has performed all documentation with the same solution since that time.

A Clinic's-Eye View of EMR-EHRs and ROI

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The primary care Davies' winners see many of the same advantages from using EMRs as larger institutions. In many ways, ambulatory-care applications are more personalized and data-rich, and affect an astonishing, near-total transformation of the business. In some cases, clinics report doubling or even and tripling caseloads—with a corresponding jump in revenue—and with only marginal increases in staffing. At the same time, many report that they more easily pass regulatory audits than ever before.

Even in the touch-and-go world of pediatrics, after EMR-EHR implementation, practices see decreased medical liabilities, more accurate and thorough documentation, enhanced patient care, and improved quality-review scores. Patients no longer must wait as long to see a doctor, increasing their satisfaction. And staffers are happier, because their world no longer is awash in paper charts. Meanwhile, unlike hospitals, practices can demonstrate a bevy of soft and hard investment returns, accompanied by a wealth of statistical data that underline the successful automation of their practices.

Soft Return on Investment

Almost every Davies' winning clinic pointed to quality of care improvements and workflow refinements as key outcomes of having an EMR-EHR.

Quality of Care

• Riverpoint Pediatrics in Chicago, IL, decreased wait time by 36 minutes in all encounters, a 40 percent decrease. The practice's time to refill prescriptions decreased from between 24 and 48 hours to 15 minutes, a 9,600 percent decrease. The time it took for Riverpoint's physicians and staff to handle phone inquiries dropped from 24 hours to 15 minutes, another 9,600 percent drop. Additionally. immunization rates jumped from 50 to 95 percent.

• Cooper Pediatrics in Duluth, GA, decreased drug-refill wait times by 42 percent and lowered turnaround telephone call time by 75 percent (to less than 20 minutes).

• Evans Medical Group in Augusta, GA, regularly searches its database for patients who are overdue for immunizations and then contacts them, resulting in garnering recognition from the state of Georgia. The practice also uses its EMR-EHR to show patients, on computer screens, what happens when they lower their blood pressure or stop smoking. "More than one patient has told me that they are very impressed with the computer program that showed them this information," says Evan's physician, Robert Lambert.

• Sports Medicine & Orthopedic Specialists, PC in Birmingham, AL, note that as a result of process improvements, physicians no longer have to wait for assistants to emerge from one patient's room to obtain the next patient's care history. They also can spend more time with patients, because most of the documentation they once had to record manually is accumulated automatically by the EMR-EHR.

• Pediatrics @ the Basin, Pittsford, NY, reports that its EMR-EHRs generate letters to specialists offering information on patients' medical condition and history, to schools administering medication to patients, to emergency departments and to patients themselves providing reminders of appointments. The EMR-EHRs also have one-click printing of instructions for care and follow-up that they can distribute to patients during office visits, resulting in fewer time-consuming callbacks.

Improved Workflow

When charts can be seen on a clinic's computers and patient encounters can be documented in a few mouse clicks, the flow of patients through a clinical environment changes dramatically. According to various Davies winners, enhanced IT produced a number of noticeable process improvements:

• Pediatrics @ the Basin physicians can call up patients' charts immediately and are alerted through their computers within five minutes of laboratory report's completion. Partly as a result, the time allotted for patient encounters has increased by 5 to 10 minutes, because administration and pharmacy callbacks are more rare.

• Wayne Obstetrics and Gynecology reports that the number of work hours devoted to documenting patient encounters decreased by 4 hours a week, while the number of patients clinicians were able to see increased by 225 percent. The clinic's new medical office building contains no chart room.

Hard Return on Investment

Clinics found remarkable numbers when studying their ROI for electronic medical records. Billing increased, paper costs dropped, chart pulls nearly disappeared, patient volume skyrocketed and revenue showed outstanding gains. Here's a snapshot of the Davies' winners statistics:

• Riverpoint Pediatrics increased collection rates from 52 percent to 88 percent in 4 years and eliminated claims denied due to coding errors. Insurance-payment turnaround time fell from between 30 and 60 days, to approximately 15 days.

• Southwest Texas Medical saw charges rise from $171 to $206 per patient encounter, a 20 percent jump. A year after implementation,, the clinic's total billable hours increased by $2.1 million, while collections rose $1.4 million.

• As a result of paper charts no longer being pulled in the office, Pediatrics @ The Basin saved $4 per chart request, totaling approximately $16,800 per year. Not having to conduct written data entry saved another $1,400 per year, while eliminating transcriptions added $10,000 to the bottom line. The clinic saved between $20,000 and $30,000 per year on personnel costs and another $5,000 annually by eliminating storage costs.

• Before go-live, Roswell Pediatrics determined that 18.3 percent of its procedures performed escaped documentation and thus were not billable. Within one year of installing the EMR-EHR, billing for procedures such as venipuncture increased from 353 to 8,324, the number of handling fees jumped from 968 to 1,734 and medical management charges jumped from one to 34.

• Sports Medicine & Orthopedic Specialists, PC spends $1,000 per month on the EMR/EHR, post-implementation, compared with the $6,000 per month the practice used to spend pulling paper charts. The systems freed up an estimated $75,000 in staff time.

• Cooper Pediatrics' patient volume jumped 225 percent over 7 years, accompanied by a modest staff increase. The clinic saw gross billings jump 400 percent and its revenue per provider, at $479,178, is 125 percent higher than the national norm.

• In four years, Riverpoint Pediatrics' revenue increased 88.5 percent, and its profit increased 90.8 percent. Patient visits per day increased 50 percent, patient volume increased 100 percent.

• Southeast Texas Medical Associates saved $120,000 in administrative costs, $380,000 in supply costs (dropping from $8 per patient to $.97) and $103,000 on phone call inquiries.

Lessons Learned

Ambulatory care clinicians who implemented EMRs had no shortage of advice for their colleagues. Because they work in small environments in which nearly every staffer was touched by the transition to the EMR-EHR, they offer great ideas as both participants in the process and as champions of a new operations structure. Among their suggestions:

• Investigate applications that enhance office workflow. Give yourself time to select an appropriate system and build in customizations.

• Invest in good products that have active user bases and are not likely to become part of a "legacy system."

• Find a company that allows template customizations and has a good product development track record with frequent upgrades.

• Try the "little bang" theory of installation, implementing only portions of the EMR-EHR at a time for minimal disruptions.

• Do not force-feed change. Incremental improvements have a big trickle-down effect; use less enthusiastic adopters as your benchmark. If the tools work for your skeptics, they'll work for everyone.

• Buy an uninterruptible power supply, such as 15-minute UPS for clinical workstations.

• Consider leasing hardware. That way, you may have greater flexibility to add, upgrade, or change. Also, hardware prices decline and leasing can spare you from committing to an over-priced purchase.

• Make no assumptions during contract negotiations with vendors. Bring in an EMR-EHR consultant and a good attorney.

• Research, then do some more research. Some practices studied 20 vendors before

choosing.

• Offer lots of training. Allow for both Web-based and in-office training.

• Make sure the office layout features a plan for a dedicated server room and wiring for workstations, unless you're going wireless.

• Know the certification levels of the system administers working with you on the installation. The higher the certification, the better the result.

• Learn basic hardware and software maintenance.

• Employ two or three backup systems to save data.

• Consider touch-screen computers in each examination room to add to patient interest and satisfaction.

• Ask plenty of questions about the level of tech support your vendor will provide.

Appendix

The following is a list of Davies' award winners in the primary-care category. The award has only been given since 2003, but the list features multiple winners who operate pediatrics, sports, and family medicine practices.

2005 Davies Award Winners

Southeast Texas Medical Associates LLP
Location: Beaumont, TX
Physicians in practice: 24
Nurses: 12
Additional Staff: 260
Patient Encounters: 263,000
EMR Vendor: NextGen EMR and EPN, NextGen, Inc.

Sports Medicine & Orthopedic Specialists, PC
Location: Birmingham, AL
Physicians in Practice: 4
Nurses: 3 (includes clinical staff)
Additional Staff: 6 clinical, 6 billing/clerical
Patient Encounters: 20,000
EMR Vendor: AllMeds

Wayne Obstetrics and Gynecology
Location: Jesup, GA
Physicians in Practice: 1
Nurses: 4
Additional Staff: 5
Patient Encounters: 6,000
EMR Vendor: EncounterPro EMR, JMJ Technologies, Inc.

2004 Davies Award Winners

Old Harding Pediatric Associates
Location: Nashville, TN
Physicians in Practice: 14
Nurses: 44
Additional Staff: 32
Patient Encounters: 72,500
EMR Vendor: Noteworthy Medical System

North Fulton Family Medicine, PC
Location: Cumming, GA
Physicians in Practice: 7
Nurse/Nurse Practitioners: 1
Additional Staff: 16 medical assistants, 22 other employees
Patient Encounters: 51,000
EMR Vendor: HealthMatics EMR, A/4 Health Systems

Pediatrics @ The Basin
Location: Pittsford, NY
Physicians in Practice: 2
Nurse/Nurse Practitioners: 4
Additional Staff: 3, billing, management
Patient Encounters: 4,200
EMR Vendor: SOAPware, Docs Inc.

Riverpoint Pediatrics
Location: Chicago, IL
Physicians in Practice: 1
Nurses: 3 (2 medical office assistants, 1 physician assistant)
Additional Staff: 5
Patient Encounters: 6,854
EMR Vendor: EncounterPro, JMJ Technologies Inc.

2003 Davies Award Winners

Cooper Pediatrics
Location: Duluth, GA
Physicians in Practice: 1
Nurses: 5
Additional Staff: 4
Patient Encounters: 18,172
EMR Vendor: EncounterPro, JMJ Technologies, Inc.

Evans Medical Group
Location: Augusta, GA
Physicians in Practice: 3 full-time, 1 part-time
EMR Vendor: ClinicalLogic, Medical Logic

Roswell Pediatric Center
Location: Alpharetta, Ga.

Physicians in Practice: 9
Nurse/Nurse Practitioners: 5.5
Additional Staff: 22.6 clinical, 36.9 support
Patient Encounters: 82,000
EMR Vendor: Noteworthy Medical Systems