



## A Desire for Change: Strong Leadership Required in the EMR-EHR Revolution

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 the desired functionality and the institutions' return on investment (ROI).

The purpose of this white paper, and the three others in this collection, is to give healthcare providers a survey of best practices in EMR-EHR implementation, solid examples of leadership, and a glimpse at the ROI the EMR-EHR offers. This paper focuses on the importance of leadership and the creation of an inclusive environment in preparing hospital personnel for an EMR-EHR implementation.

Most of the information in these papers comes from Davies "organizational" winners between the years 2001 and 2005—the post-Y2K era—when EMR-EHR vendors began aggressively adding more modernized features to their clinical systems, and EMR-EHR implementation became more sophisticated.

Large hospital systems surveyed include **Maimonides Medical Center** in Brooklyn, NY; **Queens Health Network** in Queens, NY; **Evanston Northwestern Healthcare** in suburban Chicago, IL; **Cincinnati Children’s Hospital Medical Center**, OH; **The University of Illinois at Chicago**, **Ohio State University Health System**, Columbus; and **Harvard Vanguard** in Boston. Smaller institutions include **Heritage Behavioral Health Center Inc.** in Decatur, IL. and **Citizens Memorial Healthcare** in Bolivar, MO.

### **Leadership from the Top**

There are many clichés about leadership, most of them true. Leadership in healthcare does indeed start at the top, as in most industries. Solid executive leadership does make things happen. No Davies award winner has achieved a successful EHR installation without the support of their organization’s top leaders, as well as supervisors and managers. Leadership is required to select appropriate vendors, plan the implementation, corral the support of physicians and staff, and navigate the inevitable rough patches that form during the dramatic transformations an EMR-EHR brings to institutions.

Support from the top is a prerequisite of good EMR-EHR installations and a strong indicator of good leadership. **Maimonides Medical Center** in Brooklyn found it was crucial to have “a strong CEO prepared for the expected difficulties, especially with the community-based physicians.” Writes Maimonides: “When necessary, the CEO brought together the various constituencies in the organization to solve problems together.”

**Queens Health Network’s** CEO “has been tireless in his promotion of the system, endorsing it in public and private sessions throughout the organization and never ceasing to encourage the recalcitrant or reluctant to implement it.”

**“The board of directors drove strategic planning, which focused on developing an organizational culture in which patient safety was the number one priority.”**

*Cincinnati Children's Hospital Medical Center*

The CEO of **Citizens Memorial Healthcare** visited his vendor’s headquarters and participated as the keynote speaker at the launch of the EMR-EHR. He “expressed confidence in the success of the implementation” and the positive impact it would have on patient care, the hospital wrote in its Davies submission.

Boards of directors can play an equally important role. “The board of directors drove strategic planning, which focused on developing an organizational culture in which patient safety was the number one priority,” wrote the authors of **Cincinnati Children’s** submission. Having leadership declare automated patient records a strategic goal helps ensure a smoother transition to electronic records. **Evanston Northwestern Healthcare** “laid the foundation for success” by “making it the number one goal for the corporation for three years,” according to its submission.

But leadership at the top is only part of the story. At **Queens Health Network** the medical director “insisted” on a system a physician could use easily and that had enhanced decision support functions. At **Evanston Northwestern** the authors of the Davies submission wrote: “The project had complete support from leadership: When people were needed for testing, their managers made them available for testing. When an emergency meeting was needed, people mobilized at once. Resources were made available for the extensive and compulsory training and for the floor and unit coverage needed while staff was away at training.”

The executives' vision must be transferable to others throughout an organization. Davies winners cite leadership in three distinct related areas: EMR-EHR planning, project governance, and risk assessment. Recipients displayed strengths in each of these areas, which we will look at in some detail. This paper will also take a longer look at **Maimonides Medical Center** in Brooklyn, NY, because, in many respects, it serves as the quintessential leadership model.

### **EMR-EHR Planning and Vendor Selection**

Planning for an EHR begins with committees and lots of them. The more input planners receive, the more buy-in they achieve from management and staff. If every department has a seat at the table, implementation will proceed more smoothly because hospitals can add functionality to the EMR-EHR based on staff input and customize training and educational materials for various users.

The EMR-EHR planning committees often have been assigned the task of creating the vision, goals, and strategic objectives for EMR-EHRs. At **Cincinnati Children's**, a group of leadership teams created a list of nine objectives, from optimizing patient safety to enhancing research productivity. **Evanston Northwestern** focused on just four goals: improved patient safety through elimination of illegible orders and medication errors, access to the right patient data, accurate information in the records, and simplifying consistent processes throughout the organization.

To make the project less about IT and more about clinical improvement, some institutions created committees to oversee EMR-EHR projects outside the IS departments. **Evanston Northwestern** formed a "Medical Informatics" department to lead the EMR-EHR effort as a "clinical project" and has members supporting new systems, overseeing upgrades and working with operations to adjust workflow throughout the enterprise. A Physicians Advisory Group also contributed guidance to the system's IT department.

Not all Davies winners followed that approach. **Citizens Memorial** created an IS Steering Committee—comprising technologists as well as directors of clinical services, finance, home care, and other relevant departments—to handle a needs assessment, to align organizational strategic objectives with IT strategies, and to produce a series of guiding principles. **Ohio State** used an IT team, in association with clinical and administrative personnel, to produce six goals for computerization of the medical records system.

Mixing up the committees with representatives from different departments makes sense when leading an organization through the EMR-EHR implementation. "Cross-functional teams, with representatives from frontline staff to corporate leadership, led the project as Heritage completely overhauled critical direct care and support service processes to take fullest advantage of the new technology," **Heritage Behavioral Health** personnel wrote in their submission.

These same teams, sometimes in combination with others working under the rubric of EMR-EHR planning, often helped conduct vendor selection. **Ohio State** had its two teams write a request for proposals to various vendors. They also assisted in the actual vendor selection—along with hundreds of employees who, at meetings, had a chance to voice their support or concerns with technology solutions

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provided by the three finalists.

**Citizens Healthcare's** IS Steering Committee led the vendor selection but involved 39 teams of employees "at each step," which created "strong consensus around the plan from the organization." The teams were asked to think big about what a perfect system might do to help them in their jobs.

Part of the vendor selection responsibility pivots on the important decision of whether to create custom applications in-house, to contract with multiple vendors, or to use, primarily, one vendor. **The University of Illinois at Chicago** considered custom clinical applications but decided, in the end, its competencies lie in care of the sick, not software development. **Maimonides**, on the other hand, discovered "no single supplier ... could meet its requirements or deliver a truly integrated solution." It decided to work with four vendors and, after the implementation, spun off a for-profit business with one of them.

### Governance

Depending on the hospital, EMR-EHR governance might be the responsibility of one committee, or many. Frequently, hospitals had separate governing bodies overseeing implementation, a point discussed in the HIMSS implementation white paper, "Making it Happen."

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**Evanston Northwestern** developed two teams, one in IT, the other representing seven clinical and operational department areas affected by the EMR-EHR, to perform the governance role. Team leaders from the seven operational areas met two to three times a week with their staffs to shape the system: "These planning meetings uncovered multiple issues. When necessary, team leaders escalated the issues to the [IT] steering committee for resolution."

**Ohio State** approached governance differently. There, staff divvied up the work. Physicians and clinical staff conducted a needs analysis to make certain the EMR-EHR could serve as a caregiver's "decision-making guide." Hospital administration and the IS department worked on contract negotiations with the vendors. Information systems led the initial implementation charge. When the project reached the system design and development stage, governance shifted back to physicians, with an assist from the IS department. A ten-member Physician Consulting Group met for two years to build support among colleagues and to offer IS input on ways to improve the EMR-EHR.

After implementation, the physician consulting group disbanded and a new group, the Computerized Clinical Information Committee, chaired by the chief medical officer and the health system medical director, began overseeing the EMR-EHR's impact on teaching and research at Ohio State's College of Medicine and Public Health. The committee also looked at ideas for improving the system with new technology, integration, and best practices.

A division of duties also occurred at the **University of Illinois at Chicago Medical Center**, where the EMR-EHR effort was dubbed "The Gemini Project." The executive Management Systems Steering Committee, comprising clinical and executive leaders, prioritized IT projects after aligning them with the institution's goals. Co-chairs for that committee were a physician and an IT professional. The Gemini Executive Implementation Committee, meanwhile, planned the

implementation, meeting monthly to discuss issues and hear updates.

A successful EMR-EHR demands input from all hospital departments that will use the technology to improve patient care and increase productivity. Committees are the foundation for creating a system in which stakeholders can offer advice, suggestions, ideas, and criticism. Depending on the size of the institution, those committees can be numerous, or few. But their importance cannot be underestimated. As in a democracy, they provide leadership with a sounding board for the implementation, an organized platform for proselytizing potential users, and an idea mill for potential improvements.

### **Risk Assessment/Business Case**

Two other areas of leadership noted in Davies submissions are undertaking risk assessment and establishing a business case for EMR-EHR implementation. In assessing risk, leaders look at how and why an implementation might fail and create safeguards to ensure that cannot happen. Likewise, by offering a business case for an EMR-EHR—rather than using fallbacks such as “it’s a good idea” or “it’s the right thing to do”—executive and clinical leaders create a gauge by which they can judge their progress.

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**Citizens Memorial**, for instance, assumed a positive return within five years based on several goals: to grow admissions; to increase revenue by adopting standardized protocols and recording accurate coding; to decrease transcription charges; to eliminate five positions; and to jettison expenses associated with paper records. At **Evanston Northwestern**, the steering committee built its financial case on increased accuracy in diagnoses and medication administration, fewer receivables and fewer employees in billing, and centralized scheduling.

It’s not all about money for some Davies winners. A much different and less elaborate business case can be found in the **University of Illinois at Chicago’s** submission. The authors say the project had “no specific financial objectives” but laid out three general goals: To reduce supply costs, achieve reimbursement benefits, and also achieve revenue enhancements.” The Chicago submission points out the driving force behind the project was never about saving money, but rather “centralizing ambulatory clinics in the new Outpatient Care Center” and creating a “longitudinal, electronic health record that would be available virtually across the organization.”

Project risk plays into leadership, too. The committees and executive councils acknowledge project risk in a variety of ways prior to an EMR-EHR implementation, and then plan as much as possible to mitigate those challenges. One of the greatest risk factors is staff buy-in—the fear that personnel will not adopt new standards or adapt to new ways of doing business. The other largest challenge arises from the potential downtime during implementation.

**Cincinnati Children’s** believed user acceptance posed the greatest threat to its EMR-EHR project. To mitigate that concern, the institution created a design team staffed by physicians who received compensation to attend meetings and review design standards. Another team of nurses helped with the clinical documentation platform. The hospital hired a consulting firm to handle project management and embarked upon a public relations campaign 18 months before the first implementation, talking to internal groups as well as newspaper and television reporters. The

hospital also carefully chose the first units for implementation based on the likelihood of success.

**Citizens Memorial** laid out eight areas of risk, nearly all of them associated with the possibility of staff rejection of the EMR-EHR. Techniques were adopted to checkmate each of the risks. For instance, the hospital system feared “known problem people” would resist change. It decided to solve that issue by identifying those people early and “make a positive effort to engage them in the process.” Some end users may lack computer skills, the risk assessment concluded, but the institution would overcome that problem with training.

While undertaking its EMR-EHR, **Heritage Behavioral Health Center** grew concerned about lost productivity and staff resistance. To minimize disruptions, Heritage developed a training and certification program for staff and offered a technical help desk to assist users having problems with the new system. The institution also deployed a marketing team to promote the EMR-EHR and participate in pilot projects and to offer input on screen designs and process improvements. They “became vocal champions of the project.”

Most inherent EMR-EHR implementation risks can be addressed through communication, education, and by maintaining an open environment. There is a consensus among Davies winners: Staff members must be kept up-to-date on a project's progress. They must receive good training—an issue dealt with in greater detail in the implementation white paper—and should be offered opportunities to learn in different modalities, from live presentations to online learning and written materials. They must also have the opportunity to provide input and see that their best suggestions are incorporated into the project.

### **Leadership Case Study: Maimonides**

In becoming one of the first hospitals in New York City to install an EMR-EHR, **Maimonides Medical Center** took great care to get the process right and gain support from virtually every internal constituency, from the executive leadership down to lower-level staff. The hospital's Davies submission cites three factors for success:

- The “strong” support of the CEO and COO.
- The financial commitment of the board of directors to spend one-third of the hospital's entire capital budget on creation of an EMR-EHR, a \$41.5 million expenditure over 7 years.
- The organization's refusal to be deterred by the fact that no one in New York had ever attempted a hospital-based clinical IS at the time.

Before implementing an EMR-EHR, a Maimonides needs assessment showed three areas in which electronic records and advanced decision support would play an important role:

- Obstetrics, because of litigation, needed an initiative to reduce errors.
- The emergency department, where paper records can get lost and billing documentation forgotten in a fast-paced, high-volume environment.
- Ambulatory care, where patients return often and need solid charting to improve their treatment outcomes.

A project risk assessment showed five areas of concern, the major one being that staff lacked confidence in the IT department, an issue the hospital addressed by several “quick hit” successes loudly broadcast through internal newsletters, go-live celebrations, and rapid response to any issues raised by staff.

Part of the hospital’s approach featured a strong EMR-EHR governance arrangement. An executive committee chaired by the COO was formed. Work teams covering all aspects of the project—training, support, integration, communications—were created. Project sponsors oversaw every aspect of implementation, and a Physicians Task Force and Nursing Council assisted in dealing with disputes and other issues. As part of this process, the hospital’s approach included:

### ***Physician Project Sponsors***

Two physicians, one a salaried attending physician, the other a community-based, provided leadership to bring together support of the physician community. Both were well-known, one served as past president of the medical staff.

### ***Physician Task Force***

This task force offered ownership and accountability to physicians representing key specialties. The chairman was a physician leader, someone who was able to “fight” to help guide physicians through the process.

### ***The Coach***

A savvy "coach" was appointed to help guide the project team, ushering it around invisible "land mines" and navigating members through the institution's tough politics. The coach had no formal authority, but as "an individual who knew the institution inside and out" and who was committed to the project's success, the project team coach proved a crucial figure.

### ***An Information Technology Advisory Committee***

The committee included the COO, clinical chairmen, vice presidents, and physicians assigned the task of IT planning, prioritizing capital projects, instituting technology education, and approving software and hardware standards.

### ***A Continuous Improvement Cycle Methodology***

The hospital devised a way to continually improve system through suggestions from staffers, physicians, IT managers, and others.

### ***The Segmentation of Physician Users***

The hospital had to treat different users differently. For example, community physicians wanted access at home and at the office, so a special office suite was designed for them.

### ***Paying Attention to Specific Needs***

Physician input was constant throughout the process. For example, physicians wanted the ability to look up current beeper numbers. After modifications to the software, physicians who at first could not identify the ordering physician--because the system listed only initials--were

immediately able to use a “name-find” feature that matched initials to doctors' full names.

### ***Communicating the Right Messages***

Newsletters, training, and other education efforts showed physicians why the EMR-EHR would save time and money while increasing their productivity.

### ***Clinical Advisory Subcommittees***

The IS department had a standing invitation to participate in the hospital’s many subcommittees as presenters and guests during implementation, during go-live time, and afterward. This allowed staff to list concerns and hear updates of progress.

### ***Constant Forward Communication***

A monthly newsletter described the activities in all systems.

These approaches all played a role in Maimonides' successful EMR-EHR implementation. The hospital’s EMR-EHR lived up to its promise by improving care and regulatory compliance, increasing patient satisfaction and staff productivity, and saving millions of dollars (financial details can be found in the HIMSS white paper on return-on-investment).

All this success was not an accident. It derived from outstanding leadership and thorough planning to mitigate any surprises. Leadership throughout the organization grew to support the EMR-EHR and to see it as a first, but an exceptionally important step in preparing Maimonides for the 21<sup>st</sup> Century.

### **A Salute to the Pioneers**

The focus of the papers in this series has been on EMR-EHR implementations occurring during the present decade. The reasons are fairly obvious: Most lessons still applicable to other institutions in terms of IT leadership, ROI, and implementation stem from recent years, when applications reached a level of maturity and modernity and when the healthcare industry at large finally began to embrace the technology.

The first Davies awards were handed out in 1995 to three institutions, **Intermountain Health Care** of Salt Lake City, UT; the **Veterans Health Administration** (VHA) of Washington, DC; and **Columbia Presbyterian Medical Center**, of New York. It is worth noting that one of those winners, Intermountain Health, observed in its submission that pioneers are "those having arrows in their backs." The vital contributions of those early award winners should not be overlooked.

The **VHA's** Decentralized Hospital Computer Program (DHCP) is the forerunner of today's VistA EHR, which serves as the foundation of a free electronic health records program being distributed by the federal government to small hospitals and practices. The program began in 1979 as an initiative launched by a small group of VA hospitals. As the feasibility of nascent EMR-EHRs became apparent, the agency began to perform cost-benefit analyses, feasibility studies and, finally, to fund the project. By 1982, the agency decided to take a decentralized approach to hospital IS, and DHCP was born. By the time of its 1995 Davies application, the program was the base information system for the entire Veterans Health Administration network, supporting 171 medical centers, 450 outpatient clinics, and 131 nursing homes.

**"While [the EMR-EHR's] creation was remarkable, the truly impressive feat was the acceptance it received from caregivers."**

*Intermountain Health Care*

The contributions of **Intermountain Health Care** also deserve special mention. The Utah institution's journey into clinical IT began four decades ago when what was then LDS Hospital began applying computer technologies to medical care. Those early homegrown experiments resulted in the creation of a system known as Health Evaluation through Logical Processing (HELP).

"While its creation was remarkable," the Intermountain submission's authors note, "the truly impressive feat was the acceptance it received from caregivers." In some ways, Intermountain Health may have dished up the prototype for all future EMR-EHR installations, both because of its early failures

and the way they were overcome. The organization admits that its initial "pioneering phase" was "long on vision, but short on classic systems planning, such as governance, strategy, benchmarking, justification, etc."

But leadership evolved, and the system generated such promising results—and favorable local press coverage—that by 1987 it had secured the solid backing of Intermountain's board of directors. The board opted to continue funding the system, then known as IHCNet. "It has always been incumbent on Information Systems leadership to facilitate that commitment and remain flexible in light of evolving strategic priorities," IHC's authors write.

The authors of this paper would be remiss not to mention, finally, the pioneering efforts of **Brigham and Women's Hospital** (Davies winner, 1996), Boston's 712-bed academic medical center. Brigham and Women's pioneers, including über-CIO John Glaser, chose as their mandate "to build new clinical information systems that would change the computer's role in the healthcare process." It can be said that the institution proceeded a considerable distance by 1996 toward realizing its goal that "the computer would become an active partner in promoting optimal quality of care, reducing adverse events and reducing costs." The fact that it was successful, the organization's authors state, was due to several key factors: strong support for IT from the organization; "prescient" technical design decisions; a software design strategy that put the clinician first; intensive groundwork by the IS crew to prepare the institution for a major cultural shift; and quick responsiveness to user feedback. It might have added a sophisticated governance structure based on Brigham's philosophy that clinical IT requires individuals with significant knowledge of both IT and clinical practices.

"As a result of the successful implementation of these systems, the Brigham Integrated Computing System has been able to exceed the projected impact on quality and cost of care," the authors state. A study conducted prior to the hospital's Davies application concluded that order entry—a significant part of the institution's IT initiative—could prevent 80 percent of adverse medication events, each of which cost an estimated \$6,000, a figure that does not count costs to the patient or the healthcare system for any increased disabilities resulting from adverse drug events.

The successes measured throughout these papers could not have taken place without the efforts of these, and all 12 pre-2000 Davies institutional award winners.

## Appendix

### ***Davies Award Winners***

The following is a list, by year, of recent Davies award winners. The statistics cited are taken from the submissions and have not been updated.

#### **2005**

Name: Citizens Memorial Healthcare  
Location: Bolivar, MO  
Practice Size: one hospital, five long-term care facilities, 16 physician clinics, three hospitals with 800 beds, 68 office locations  
Number of Physicians: 98  
Nurses: NA  
Total Staff: 1,538  
Patient Volume: 130,031 clinic visits, 19,888 emergency visits; 2,776 surgeries, 464 births, 14,455 home care visits  
Vendor: MEDITECH

#### **2004**

Name: Evanston Northwestern Healthcare  
Location: Evanston, IL  
Practice Size: three hospitals with 800 beds, 68 office locations  
Number of Physicians: 1,600 hospital physicians, 284 community-based physicians  
Nurses: 1,300  
Total Staff: NA  
Patient Volume: NA  
Vendor: Epic

#### **2003**

Name: Cincinnati Children's Hospital Medical Center  
Location: Cincinnati, OH  
Practice Size: 324-bed children's hospital  
Number of Physicians: 1,045  
Nurses: 1,750  
Total Staff: NA  
Patient Volume: 696,310 outpatient visits; 87,000 emergency visits, 20,303 inpatient visits, 11,717 home care visits  
Vendor: INVISION, Siemens Medical Solutions Health Services Corp.

#### **2002**

Name: Maimonides Medical Center  
Location: Brooklyn, NY  
Practice Size: 705-bed hospital  
Number of Physicians: 277 staff, 978 community physician network  
Nurses: NA  
Total Staff: 4,612 total staff  
Patient Volume: 367,000 (est.)

Vendor: Eclipsys 7000 Inpatient, NextGen Ambulatory Care CPR, E&C IP Rob Perinatal CPR, A4 Health Systems Emergency Department CPR

Name: Queens Health Network

Location: Queens, NY

Practice Size: two hospitals, 11 medical clinics, six school-based centers

Number of Physicians: 748

Nurses: NA

Total Staff: 6,106

Patient Volume: 1 million ambulatory visits

Vendor: Ulticare Patient1, Per-Se Technologies

## **2001**

Name: University of Illinois Medical Center at Chicago

Location: Chicago, IL

Practice Size: 450-bed hospital, two outpatient centers, 12 primary care centers

Number of Physicians: 715 physicians

Nurses: 1,200

Total Staff: 1,460

Patient Volume: 18,000 inpatient visits, 400,000 outpatient visits

Vendor: HNA Millennium, Cerner Corp.

Name: Heritage Behavioral Health Center, Inc.

Location: Decatur, IL

Practice Size: One facility, several outreach programs

Number of Physicians: Not available

Nurses: NA

Total Staff: NA

Patient Volume: 4,000

Vendor: HNA Millennium, Cerner Corp.

Name: Ohio State University Health System

Location: Columbus, OH

Practice Size: five hospitals, 849 staffed beds

Number of Physicians: 700

Nurses: NA

Total Staff: 5,998 members, includes nurses

Patient Volume: 41,565 hospital admissions, 232,628 inpatient days, 80,852 emergency visits, 697,843 physician office visits

Vendor(s): Siemens, IDX, AGFA-Bayer, SeeBeyond, Oracle

## **2000**

Name: Harvard Vanguard Medical Associates, Harvard Pilgrim Health Care

Location: Boston, MA

Practice Size: 14 delivery settings

Number of Physicians: 600

Nurses: NA

Total staff, 2,100

Patient Volume: 300,000

Vendor: EpicCare, Epic Systems, Inc.

Name: Veterans Affairs Puget Sound Health Care System

Location: Washington State

Practice Size: two large campuses

Number of Physicians: 850

Nurses: 668

Patient Volume: 40,000

Vendor: Self-produced

### ***The Pioneers***

Davies winners, pre-2000

### **1999**

The Queen's Medical Center, Honolulu, HI

Vendor: Eclipsys 7000, Eclipsys Corporation; Logician, Medica Logic

Kaiser Permanente Rocky Mountain Region, Denver, CO

Vendor: EpicCare, Epic Systems

### **1998**

Northwestern Memorial Hospital, Chicago, IL

Vendor: EpicCare, Epic Systems

Kaiser Permanente Northwest, Portland, OR

Vendor: EpicCare, Epic Systems

### **1997**

Kaiser Permanente of Ohio, Cleveland, OH

Vendor: Self-produced

North Mississippi Health Services, Tupelo, MS

Vendor: Eclipsys Corp.

Regenstrief Institute for Health Care, Indianapolis, IN

Vendor: Self-produced

### **1996**

Brigham and Women's Hospital, Boston, MA

Vendor: Self-produced

Group Health Cooperative of Puget Sound, Seattle, WA

Vendor: Self-produced

### **1995**

Intermountain Health Care, Salt Lake City, UT  
Vendor: Self-produced

Columbia Presbyterian Medical Center, New York, NY  
Vendor: Self-produced

Department of Veterans Affairs, Washington, DC  
Vendor: Self-produced

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