

Record Rollout for Physicians

Major Massachusetts medical center deploys electronic medical record system for nearly 80 ambulatory practices.

By Sandy Harrington, R.N.

Deploying an electronic medical record (EMR) system can be a challenge for many healthcare providers, but getting a major regional hospital and its tens of clinics and thousands of users up and running with one is a challenge of another magnitude. However, with well-reasoned planning and a commitment by all those participating, this otherwise daunting task can proceed smoothly—and produce great success.

Breaking Down Barriers

Boston Medical Center (BMC) is a private, non-profit academic medical center located in Boston's historic South End. The 547-bed hospital is the primary affiliate for the Boston University School of Medicine. With its emphasis on community-based care, BMC is the largest safety net hospital in New England, providing a full spectrum of pediatric and adult care services, from primary and family medicine to advanced specialty care.

BMC was formed in 1996 as a result of the merger of Boston City Hospital and Boston University Hospital. The evolution of these distinct bodies into a single entity spanning 10 city blocks created familiar infrastructure issues, not the least of which was the existence of multiple paper medical records, multiple record rooms, and wide-ranging storage and retrieval policies.

Quality of patient care and patient safety drove the decision to implement a centralized EMR system universally used by primary, specialty and subspecialty providers at BMC. The merger facilitated the hospital's adoption of an EMR system, because "the barriers to integrating the previously independent processes were so great, and the need so strong, that the physicians were ready to try any new approach that held promise," says Meg Aranow, BMC vice president and CIO.

In the fall of 2000, BMC started to implement Centricity EMR (formerly Logician) from GE Medical Systems Information Technologies (GE Medical), Waukesha, Wis., for its ambulatory practices. BMC chose the EMR system because Eclipsys Corp. was a reseller of it, and BMC already had Eclipsys' Sunrise Clinical Manager in use.

Early Needs

The early BMC adopters were the newly formed department of family medicine, followed soon after by obstetrics and gynecology, adult medicine, and pediatrics and adolescent medicine. In the following 18 months, several practices went live on Centricity EMR every two or three months. Progress was slow, and the need to access a single, centralized electronic record from either campus was obvious.



Sandy Harrington, R.N., is business applications development manager, ITS department, of Boston Medical Center. Contact her at sandy.harrington@bmc.org.

Once implementation began, providers were unsure about which patients had EMRs versus paper records. In addition, the delivery and retrieval of records for patients with unscheduled visits or with multiple appointments on the same day was a daunting task. Seven full-time employees were required to attempt to deliver the paper record to the appropriate location in a timely manner. Providers began keeping “shadow charts” in their offices, further complicating the issue of paper chart integrity.

During the summer of 2002, the board of directors and Elaine Ullian, BMC president and CEO, committed the necessary resources to achieve enterprisewide implementation of Centricity EMR in fiscal year 2003 (October 2002-September 2003). Twenty-two practices—largely specialty and subspecialty “holdouts” in 34 locations—needed to be live with Centricity EMR by the fiscal year’s end. Senior management lent unfaltering support to a moratorium on custom development for established EMR users while the Centricity EMR team embarked on the year of deployment.

Waves of Implementation

A 15-week cycle encompassing 12 phases dictated the EMR system rollout to each practice (see **Table 1**). Given that 22 clinics were to go live during the fiscal year, 330 weeks would have been required to accomplish the undertaking if the rollouts were done one at a time. To manage this effort, three consecutive waves of implementation were planned, with each wave consisting of approximately eight simultaneous implementations in a 15-week period and the total effort spanning 45 weeks.

<ul style="list-style-type: none"> ➤ A “Logician in Your Clinic” overview ➤ Formation of a Key User Steering Committee ➤ A kickoff meeting to lay out process steps such as weekly workflow meetings, training schedules, go-live booking levels and dates, pre-loading decision problems, medications, allergies and directives, sign off on development work and pre-go-live simulation ➤ Weekly meetings with key users to review and re-create forms, custom lists for problems and medications, flow sheets, letters, referrals, orders and other items in the EMR system ➤ Assessment of needs for and deployment of personal computers, local and network printers, data cabling and electrical wiring, carpentry, carts and wall mounts for equipment as indicated ➤ Sign off on customization ➤ Deployment of customized encounter forms ➤ Pre-loading of clinical lists as indicated ➤ Training ➤ Simulation ➤ Go-live ➤ Two weeks of post-go-live support
--

Table 1: Phases of 15-Week Cycle for Centricity EMR Rollout

The three-wave implementation lent high visibility to the project and created an enterprisewide focus. We clearly were moving way beyond chipping away at implementation one practice at a time. The importance of keeping to timelines and meeting deadlines was clear, because there was very little room between the end of one wave and the beginning of the next one. Practices that had difficulty identifying steering committee resources were passed over and rescheduled for the final wave. In addition to creating tremendous momentum, the waves allowed for ease of project management as a result of having all of the teams at

approximately the same milestone at much the same time.

BMC approved the hiring of two new full-time analysts for the Centricity EMR team, bringing the team to a complement of five full-time analysts and a project manager. In addition, BMC brought on two full-time-equivalent consultants—HealthLink Inc. and Plum Data Mining—with strong Centricity EMR implementation and design experience to augment the team for the undertaking.

The newly constituted team included four individuals with nursing backgrounds, one pharmacist and three individuals with practice management experience. Supporting all of these efforts were GE Medical Centricity EMR support technicians who kept pace with this massive effort, assuring no missed deadlines, and BMC’s IT department technicians who enabled the successful and timely deployment.

Instant Information

Over the 12-month period, all 22 ambulatory specialties went live on time and as planned, with one exception (see **Table 2**). Although the ability to customize Centricity EMR is one of its greatest strengths, the degree of customization that was desired by the ophthalmology department had not been anticipated,

so that clinic actually spanned the second and third waves of implementation.

Nonetheless, at fiscal year's end, all ambulatory specialties at BMC were up and running on the EMR system, bringing the total number of clinics using the EMR system to 60 in 79 locations, representing 2,474 clinical users. In all, we added 258 new physician users and 536 non-physician users to the EMR system's user directory. Also, we developed more than 200 newly customized encounter forms by specialty, and deployed 220 PCs and 300 new printers. Today, there are an average of 4,663 sign-ons every day.

Wave 1	Wave 2	Wave 3
Amyloid Clinic	Cardiothoracic Surgery	Anti-Coagulation Clinic
Cystoscopy	Dermatology	Inpatient Mental Health
Hematology-Oncology	Foot Care	Neurosurgery
Neurology	General Surgery	Ophthalmology
Otolaryngology	Ophthalmology	Orthopedics
Rheumatology	Pain Clinic	Plastic Surgery
Surgical Weight Management	Pre-Admission Screening	Psychiatry/Social Service
	Women's Health	Rehabilitation Medicine

Table 2: Rollout of Centricity EMR to Boston Medical Center Ambulatory Practices

Centricity EMR is now the collaborative tool for documentation, and to that end, all physicians agreed on a minimum data set of problems, allergies, medications and an office note, even as some of the specialties and subspecialties have niche systems or processes to support the unique data requirements of their fields.

Our patients enjoy the coordinated care that is afforded when the record is always accessible and communication between specialists and primary care providers is assured. Notes are legible and have a consistency of organization that is afforded by electronic templates and not afforded by paper. Phone notes, prescriptions refills, results and even emergency department notes (made via a free-standing application and then scanned into the EMR system) are now instantly accessible on providers' Centricity desktops and in patient records. Additionally, providers can route documents and send flags, such as e-mail within the application, with a chart attached for instant and comprehensive communication. The pharmacy formulary, protocols and reminders, as well as patient handouts and educational materials, are all available within the EMR system.

Multiple Gains

Providers wonder aloud how they worked before the EMR system was available, since now they can access their records through VPN access from anywhere on campus or remotely. When they sometimes lament that it takes longer to document in the EMR system, because encounter forms have been designed by the various primary care and specialty steering committees to be comprehensive, we remind them of the hours no longer spent—often futilely—trying to locate a record or track down a specialist and having to muddle through an office visit with little or no information about a patient's history, medications or previous findings. As a result, the medical records department no longer needs couriers.

John Chessare, M.D., BMC chief medical officer, believes that the cost savings achieved through implementation of Centricity EMR are incalculable, because they are "woven into the fabric of the organization." Chessare, who also practices pediatrics at BMC, cites numerous examples:

Ø Now, when a physician sees a newborn in his practice, the hospital discharge summary is in the patient's EMR. Prior to Centricity EMR implementation, easily three minutes could be spent in "finding the nurse, throwing a tantrum and attempting to retrieve the document."

Ø In the obstetrics department alone, approximately two full-time nursing equivalents no longer have the full-time task of retrieving laboratory results. These results are now on physicians' Centricity

When [providers] sometimes lament that it takes longer to document in the EMR system, ... we remind them of the hours no longer spent—often futilely—trying to locate a record or track down a specialist and having to muddle through an office visit with little or no information about a patient's history, medications or previous findings.

desktops and in the patient record within minutes.

ØPhysicians can conclude their days from their academic offices across campus by following up on abnormal results that have arrived on their Centricity desktops.

ØCross-coverage of practices is made remarkably easier by the integrity of the problem list in the EMR system. When the instrument is used properly, the problem list “takes care of itself.” In the paper world, keeping problem lists up-to-date is an ongoing struggle.

Chessare concludes that, although having practiced in three academic medical centers, he has never been able to provide better care because of the tools that he now has at his disposal.

It is our belief that deploying an EMR system is the foundation for improvements in care. Now that all of its ambulatory patient data is in a centralized EMR system, BMC has a powerful tool with which to examine and improve performance as well as measure patient outcomes.

© 2004 Nelson Publishing, Inc