CASE STUDY

Fox Chase Cancer Center: IT Upgrade Initiative

Fox Chase Cancer Center has earned the reputation as one the nation's most comprehensive cancer treatment and research centers—and for good reason. Our three divisions—medical science, basic science and population science—deploy cutting-edge research, technique, and technology to carry out the center's core activities.

Appropriately, we've begun a massive information technology (IT) initiative that will take us to yet another level. Ultimately, this ongoing project will provide us with state-of-the art electronic medical record technology throughout the entire organization. By modernizing our IT systems, we will not only improve our research capabilities and institutional operations, but the quality of our patient care as well.

The upgrades are not only vital to our continued success but necessary in today's healthcare climate. We exist in the post-HIPAA environment where we must address the issues and challenges of electronic security and patient privacy. The only way to confront this effectively is through the development of electronic medical record capabilities.

But more importantly, the upgrades enable us to deploy technology crucial in creating a greater pool of information on cancer—its risks, treatments, prevention, and cure. This will enable our medical science division to continue providing the best patient care and clinical research, our basic science division to continue its pioneering research, and our population sciences division to better identify people at high risk and to develop strategies to reduce these risks. Those have always been foremost goals of Fox Chase Cancer Center. So far, we've made great advances. To continue making comparable strides, we needed to undertake this complex systems upgrade.

"We have a unique opportunity to develop and deploy cost-effective information systems that can support cancer care and clinical and basic research," says John Robert Beck, M.D., our newly appointed vice president for information services and chief information officer. "I was brought in, in large part, to do this."

Since his appointment, Beck has steered project teams and managers through the integration and expansion of our IT systems. Throughout this project, team members are implementing or developing appropriate technologies to streamline work processes and improve the prevention and treatment of cancer and related diseases. This initiative will ultimately impact every division, department, and employee. The result will be greater staff productivity, and it will make many elements of our jobs so much easier to perform.

Project Overview

Specifically, the project involves the placement or development of 17 different large enterprise-class information systems, Beck explains. The IT changes involve new systems which will affect most people at Fox Chase is some significant way over the next three years—as the upgrades involve not only the clinical component of our organization but the administrative as well. Every department, it has been determined, needs to be brought up to speed in a technological sense. "The Center developed a strategic plan that indicated a substantial need for new information architectures that will be filled through a clinical systems strategic planning process," says Beck.

The process involves teams focused on specific IT areas including clinical applications, patient financials and patient management, general financial applications, departmental applications, HR/payroll, time and attendance applications, infrastructure and web-access. It is all part of an encompassing effort to make the electronic medical record a reality.

Obviously, this is an immense undertaking and it will take several years to pull it all together. Projected completion is 2006.

Benefits

The project is designed to enhance operations so that our staff will enjoy a range of benefits, with each one complementing or building on the others. These include:

Improved Workflow—Essentially, many staff members are going to find that their jobs become a great deal easier. The upgrades will streamline various work processes and improve access to patient information. Tedious and time-consuming administrative tasks—the massive amounts of paperwork—will become fully automated. Most importantly, the streamlined workflow and reduced workload will increase patient throughput. Staff will be able to handle more cases per day without an increase in workforce or the size of the facility.

Improved Infrastructure—Upgrades will result in improved access to patient and clinical information, as they will provide a clinical data repository, a networked data storage area, and improved Web access that makes information easier to find and will improve communication between patients and staff.

Enhanced Research Efforts—Data collected and stored assists us in our research. Improved electronic and online infrastructures will make this data easier to obtain.

Grant Money—Enhanced research capabilities are vital in obtaining research grants. One of the key advantages of realizing a fully electronic medical record is that, as a research institution, a large part of the Center's revenues come from such grants. The upgrades will help Fox Chase to compete for these funds.

Growth—Increased grant funds will, in turn, spur growth. Right now, the Fox Chase Network includes 26 hospitals throughout Pennsylvania and New Jersey. One of the strategic goals of the institution is to double its size over the next five to 10 years—something we couldn't accomplish with current IT systems. Growth will improve on our success.

Software Changes

Already much has been accomplished, and many upgrades have resulted in immediate and tangible results For instance, the implementation of the ProVation™ MD and ProVation™ RN systems in the EMB unit, completed in March 2003, has resulted in substantial enhancement of the department's workflow and productivity through automation.

Other software changes already accomplished include ongoing upgrades to our Sunquest clinical laboratory system and implementations that include:

- The Pathways hospital scheduling system that streamlines the patient appointment process

- Advanced Benefit Notice (ABN) Compliance Advisor, that provides patients with notification when services are not to be covered by Medicare

- CoPath, an anatomic pathology system up and running since April that expands reporting capabilities

- Implementation of new applications in the Quadramed system, the medical records system that helps with the complexities of the coding of diagnostic procedures. The applications include Wincoder Infomaster (Hospital/Medical RecordsCoding), Ncoder MD (physician coding), and the APC Analyzer (code checker). These applications combine to maximize coding productivity by helping coders find difficult codes efficiently and accurately.

- WEBRx – for patient chemotherapy profile and patient medication profile, an application that allows clinicians to view the drugs that a patient is on.

Other recent integrations or implementations include:

Mediware WORx Pharmacy Information System – Created especially for clinically focused health care organizations such as Fox Chase, the system provides a database that allows clinicians to share and access needed expertise throughout the health care enterprise, and it provides timely and clinically relevant information for delivering medication quickly and without error. It targets medications, checks for likely outcomes

on-line, and allows for critical evaluation of therapeutic regimens throughout the duration of therapy.

Ultimate Payroll – This payroll and human resource system supplies Web-based payroll and employee management solutions. It streamlines employee management and payroll functions, improves efficiency and reduces overall operating costs.

USL – A general accounting and finance information system ideal for educational and research institutions, USL encompasses general ledger and accounts payable. It eventually will cover automated purchase requisitions. It provides a totally automated environment for all aspects of financial management from revenues to outlays. It makes available a financial history from the creation of an allocation to the final closeout of the project and generates reports about any information stored in the database. It features reduced manual entry and paperwork to minimize potential operator errors and reduces the time required to process transactions.

Implementations on the way include:

Impath Cancer Registry – This software and support services system categorizes patients' tumors and places that categorization into a registry. This helps registries produce clinical and market intelligence that promote the growth and success of cancer programs. The ability to access and interpret cancer data easily and cost effectively helps create better treatment opportunities and options. The registry delivers precise information and adds data across multiple locations within large healthcare networks.

Target Institutional Advancement – This fundraising system helps track donors and events and all efforts involved in raising money.

Kronos – A time and attendance system, Kronos eliminates paper time sheets by tracking staff schedules.

Co-Partnering for Oncology

Perhaps the most significant part of this massive project involves the Soarian Clinical Applications, or the SCIFI project, which will take about three years to fully implement.

Fox Chase Cancer Center is one of the first adopters of this cutting-edge product suite, which was developed by the Siemens Corporation. In fact, the Center will actually work with Siemens as a co-developer of a new and very specific oncology module that addresses the needs of oncology patients and the management of their chemotherapy treatment regimes. Fox Chase will work with Siemens in defining the needs.

The SCIFI project will involve three years of work and eight applications. The applications aren't fully developed, but we will implement them as they are finished. We plan to have four of those applications—OpenLink Interface Engine, Clinical Data Repository, Invision and Signature Patient Management and Patient Accounting, and the Novius Radiology Information System—up and running by October 2003. The other four applications—Enterprise Master Patient Index, Management and Clinical Documentation, Oncology Module Validation, and SoarianPACS—will be implemented through the course of the three-year period.

Smooth Transition

Beck indicates that a formal change management process will be conducted in each department to help ease the transition. This will involve a series of seminars that will encourage employees to embrace the upcoming changes and to get a feel for what is coming, and how to prepare for the changes.

Moreover, the personnel involved in the initiative will participate on teams whose function is to ensure that prospective systems users will have a significant say in the implementation process. In this way, we hope the users will find the new software more user-friendly and supportive to their roles within our organization.

As the fourth largest U.S. facility devoted exclusively to cancer care, Fox Chase Cancer Center has a solid reputation for outstanding patient care and a well-established track record of innovative prevention, detection, treatment, education, and research programs. This project will keep us at the forefront.

Sidebar: Provation

One area has already reaped substantial benefits from our Information Technology (IT) Initiative: the endoscopy, minor procedures, and bronchoscopy (EMB) unit. The recently installed ProVation systems provided information-management advances that resulted in immediate and substantial improvements.

Essentially, the two systems—one designed for physicians, the other for nurses—are computerized reporting solutions that allow staff to access structured texts with a simple, point-and-click menu format. Before ProVation everything was pretty much done by hand.

ProVation™ MD, implemented in November 2002, is a medical-procedure documentation and coding-compliance solution that enables physicians to produce very

detailed notes quickly and accurately. ProVation™ RN, implemented in March 2003, is the first-ever software designed by clinicians to automate nursing procedure documentation. Together, the systems streamlined the department's workflow and increased patient throughout, as procedure rooms are turned over more rapidly and the unit can handle more cases a day.

"Before Provation, everything was done by hand on paper," recalls unit manager Karen Beukers, R.N. She reports that physicians used time-consuming methods such as dictation, revision, and transcription. Sometimes, they even wrote out their own reports, which could take as long as four days to complete.

Beukers indicates that that the RN version can collect information automatically from interfaced vitals monitors, hospital information systems, and ProVation MD. Its capabilities include procedure documentation and coding compliance, and it prompts the nurses to log administration of medications and sedation scoring. It streamlines essential tasks including tracking of pathology specimens, recording lab results, educating patients, scheduling pre- and post-procedures, retrieving prior procedure notes, preparing for audits, and generating administrative reports. "Everything is done by the click of a mouse," Beukers says.

Also, ProVation is a cost-effective solution. It saves money by eliminating the need for transcription services, and it impacts revenues with a coding engine that links medical content to correct codes and edits.

Beukers points out that ProVation also helps with HIPAA compliance and preparation for JCAHO audits. "We set it up to go along with JCAHO and HIPAA guidelines as well as safety so that questions don't get missed," she says.

Other areas that ProVation positively impacts, says Beuker, are quality control, staff management and, most importantly, patient care. Test results are almost immediately available, sparing patients a great deal of anxiety. In addition, it puts a human face on health care. "It actually gives the nurse more time to visually assess the patient throughout the procedure so they don't waste all of their time writing," says Beukers. "You actually get to use your assessment skills."

ProvationMD and RN were up-and-running after a relatively short installation process, with negligible staff inconvenience. "We were using the system in a matter of days," says Beukers.

ProVation is easy to learn, she adds. Because the software was designed to be intuitive, first-time users grasp the technology quickly. Beukers mastered the system in a breathtakingly short time, even though she wouldn't describe herself as highly computer literate. Nor was it hard to teach others. "In one week I had everyone oriented," reports Beukers, "and that was accomplished while we were still working on cases. That's how easy it was."

Overall, unit physicians and nurses are excited about ProVation. After all, it has streamlined the tediousness right out of work processes and it has resulted in improved access to patient information. Basically, it has made their life less complicated.

The EMB unit is not the only area that will enjoy the benefits. During the ongoing IT initiative, ProVation MD will be interfaced to other departments, including billing, and a ProVation urology module will soon be implemented.