

Monitoring the Future:

Lexington Medical Center's Spacelabs Monitors Bring Vital Patient Information to the ICU

by Jeanne-Marie Phillips

Lexington Medical Center delivers — right to the bedsides of its most critically ill patients. When seconds count, the progressive hospital sends a full range of patient medical information pulsing over the hospital network 24/7 directly to the point of care in the ICU. The results are significant enhancements in productivity, efficiency of treatment and overall quality of care — not to mention a morale booster to a very busy nursing staff of 50 who can now spend less time chasing information and more time caring for patients, bringing a more personal touch to their stressful, demanding jobs.



Lexington Medical Center,
Lexington County, SC

"Lexington's ICU is unique among area hospitals," according to Denise Leblanc, nurse manager for the ICU. With 22 beds, it is an extremely large all-encompassing department that is not divid-

ed into specialized units. From cardiac and respiratory to coma cases, the ICU and its dedicated nurses do it all.

A History of Outstanding Care

Long recognized for its outstanding quality of medical care, Lexington Medical Center (LMC) is located in Lexington County, SC, near the state capital of Columbia. LMC anchors a county-wide healthcare system that includes six community medical centers, specialized care facilities and affiliated physician practices. Because of its reputation for excellence, LMC attracts some of the area's finest healthcare professionals and prides itself on its innovative approach to medicine.

One example is the new bedside information access in the ICU. Without leaving the patient room, nurses click on patient lab results, radiology reports and other medical records and see them on the bedside patient monitor. Also conveniently available online are prescription drug information, Micromedex, and equipment manuals, as well as policies and procedures guidelines. Gone are the days of running back and forth between the nursing station and patient room while waiting for a free ICU computer.

"Prior to the bedside system, we shared four computers among the entire ICU nursing team, social workers and others," commented Leblanc. "With so many users, it was very frustrating and inefficient to wait." Not surprisingly, as a result of the streamlined information availability, all clinicians are enjoying new convenience and enhanced workflow. Saving time and energy, nurses spend more hours with patients and are able to work more efficiently while in their rooms.

What is surprising, however, is how easily these changes were implemented. "We did not install costly individual computers or other equipment that would add complications and take up valuable unit space," explained George Evans, LMC chief information officer. "Instead LMC accesses this information right on its new Spacelabs Medical Ultraview 1700 patient monitors, which were installed about six months ago."

WinDNA Adds Advanced Functionality

The added functionality is enabled by embedded computer technology and WinDNA (Windows Dynamic Network Access) software that provides a portal to all hospital Windows applications. Spacelabs monitors, which are connected to the hospital network using existing hubs, are recognized simply as another network device similar to a PC or printer.

The technically inclined appreciate that WinDNA is a Citrix-based application, running on a Citrix thin-client embedded in the monitor. It easily accesses applications on any connected Citrix server in the hospital or on special Spacelabs WinDNA servers. However, anyone in healthcare will appreciate WinDNA's savings in time, cost and steps as it brings important patient information conveniently to the clinician's fingertips.

At LMC, Spacelabs Ultraview monitors are set up to launch the Meditech enterprise-wide hospital information system (HIS) from the hospital's Citrix server. They can call up all stored lab, radiology and patient records and communicate with the existing ECG reporting system. With the potential to access any additional hospital application on the server, the possibilities for streamlined ICU information access are unlimited. Reaching beyond the LMC walls, nurses can logon to the Internet through the hospital intranet for vital information on drugs, equipment setup and more.

Seated at the bedside, ICU staff use the WinDNA-enabled HIS just as if they were working on a hospital computer, while patient monitoring continues in the background. If the monitor senses an emergency, it immediately sounds an alarm, minimizes the current application and switches to a full-screen display of the monitoring data.

Clinicians Drove Adoption

According to Chris Beasley, senior network administrator, an unusual twist is that clinicians drove adoption of the technology. He explains that initially the hospital configured the system to work with the Meditech HIS software only. "The clinical staff immediately asked for the expanded functionality of Internet connectivity."

"So often," added Evans "IT puts in new software and it takes time to gain acceptance. This monitor made the department a hero." Recently, nursing requested bedside access to the hospital's acuity care system.

A Commitment to Breaking Technology

Remaining at the forefront of technology for the benefit of patient care is nothing new at LMC. Last year, it ranked as one of *Hospital & Health Network* magazine's 100 Most Wired Hospitals and is consistently voted Readers' Choice for the Best Hospital in the state of South Carolina by the state newspaper. It also ranks in the top 10 nationally in all categories for patient satisfaction.



The Ultraview 1700 patient
monitor with WinDNA

The LMC emergency room is one of the busiest in the state, while the ICU is always filled to capacity. With a progressive Information Technology (IT) department, taking full advantage of cutting edge technology is one of LMC's strategies for success.

In keeping with this strategy, when the hospital needed to replace its 10-year-old ICU patient monitors, it conducted a thorough survey of the marketplace before selecting Spacelabs' Ultraview 1700. Knowing that technology had progressed over the past decade, the LMC team sought out new developments to select a platform for the future.

Simply A Better Monitor

"We selected Spacelabs because in our opinion it had a superior position in the marketplace as the most advanced, functional and reliable monitor we found," said David Odell, CBET, manager of biomedical services. "First and foremost, outstanding monitor performance was the goal of the project. Within our search parameters, the WinDNA feature was a bonus." It was a bonus that brought major benefits.

Odell says Spacelabs excelled at all the standard patient monitor clinical functions, from ECG and respiratory to cardiac output and went well beyond this to deliver more.

Stepping up to a higher level of cardiac evaluation, the Ultraview monitor supports 12-lead ECG exams, while most others support only 6-lead tests. Moreover, the technology is plug-and-play, directly interfacing into LMC's existing ECG reporting system. "Other manufacturers with 12-lead testing required the purchase of proprietary reporting systems that would archive data as isolated islands of information," said Odell.

Spacelabs' monitor also supports Aspect Medical's BIS technology, a sophisticated tool that reports on the level of brain activity in sedated or anesthetized patients.

Adding to the benefits is Spacelabs' innovative Full Disclosure feature, which automatically archives 72 hours of data. "This is particularly important when the clinician wants to view the vital signs that led up to an event, or feels the patient may present similar symptoms again," explained Odell. "All this advanced functionality is extremely easy to use."

"The nursing staff particularly likes the touchscreen access and overall ease of use," commented Leblanc. "The large 18-inch flat panel display makes information easy to read during busy times in the ICU."

According to Odell, whose biomedical department headed up the installation and transition process, everything went like clockwork from the day the technology was installed through to the present. "The Ultraview units were extremely easy to connect and required no special interfacing," he said. "Their advanced architecture opens up a whole spectrum of new information access and storage."

A Smooth Transition

Enhancing the transition process, Spacelabs professional training teams were on-site five days before the installation and a complete week as the installation went live. The in depth training included patient simulators in mock patient scenarios.

"Every so often you run into the rare combination where two functions are running on one platform and this actually multiplies the usefulness. That's the case with Ultraview," said Evans. "It's simple, and it just works."...as hard as LMC's busy ICU professionals.

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