

## MOBILE COMPUTING

## Carts morphing into clinical devices?

■ Carts are getting smarter. Several manufacturers serving healthcare say they are shifting focus away from simply providing the wheels and steel that make bedside computing possible and are becoming, in effect, medical device companies.

The concept of the "all-in-one" cart is not new in healthcare, but what the phrase means may be changing. Rather than just building onto their carts the space and attachments upon which providers can mount laptop PCs, keyboards and monitors, in the past year or so companies like Rioux Vision, Elgin, S.C.; Stinger Medical, Murfreesboro, Tenn.; and Flo Healthcare, Norcross, Va.; have begun delving into clinical software integration and development.

Patrick Jensen, Stinger's vice president of research and development, calls it a fundamental shift in Stinger's strategy. The company plans to release a new cart, Fusion, in the coming spring that will include a vital-sign monitor produced by Stinger-owned Integriti Systems, Seattle. That device will integrate with the cart's onboard computer, which will automatically document and wirelessly transmit clinical data into a hospital's information system. "It's really a clinical solution," says Jensen. "We're truly in an integrated clinical workflow-enhancement mode."

The Freedom cart, which boasts the industry's smallest wheelbase at 16 inches, is already on the market. Freedom is a complete, unified computing platform produced from the wheels up by Rioux Vision, according to company president and CEO Shawn Rioux, though its onboard computer's hard drive comes from Fujitsu, Tokyo, and it has a Pentium processor. The cart is designed for bedside nursing documentation and has a built-in PC with a 17-inch LCD monitor, 256K RAM and a 20-gigabyte hard drive.

It is among the first cart-based mobile computing platforms rated for the FCC's Class A wireless computing safety standards and has earned the Underwriters Laboratory (UL) 60601-1 rating, an international electronic healthcare safety standard. Other companies also have begun securing the safety ratings.

Deborah Anthofer, IT director at Lakeridge Health Corp., Oshawa, Ontario, said the UL ratings were near the top of the list when her institution began shopping for a wireless, cart-based computing platform as part of a \$2 million capital improvement project. Lakeridge settled on Rioux. "With all these standards, you can get closer to the patient more comfortably and not worry about shock or anything like that," Anthofer says. "The patient can actually touch the Rioux Vision device,

even when it's plugged in and charging."

Another attractive feature, she says, is what she calls "the HIPAA button," which clinicians can push to blank out the display screen if someone enters a patient's room while documentation is being taken. She also likes Rioux's ergonomic electronic actuator, which allows clinicians to adjust screen and keyboard height automatically, without yanking a hydraulic lift.

Adirondack Medical Center, an independent, 98-bed hospital in Saranac Lake, N.Y., opted to deploy a kind of self-assembled prototype of Stinger's Fusion unit, purchased before Stinger acquired Integriti last October. The deployment was delayed for a time while Stinger underwent UL 60601-1 tests, but Renee Gibbs, the hospital's senior systems analyst, says it was worth the wait.

Adirondack has deployed 13 Stingers, each featuring Integriti monitors serially connected to mounted laptops, which wirelessly transmit the data into Adirondack's hospital information system from MEDITECH, Westwood, Mass. Gibbs says it's the hospital's first attempt at automated nursing documentation and was a difficult adjustment.

However, she says, "Those who embrace it, and willingly go marching up the learning curve, see pay-

back very quickly.” One surgical unit nurse said she has trimmed her documentation time by two-thirds, Gibbs says.

## **Built for comfort**

Other cart manufacturers such as JACO, Franklin, Tenn., and Ergotron, St. Paul, Minn., aren't moving into software development and integration, instead opting to push ergonomic and other improvements. In January, Ergotron merged with Constant Force Technology L.L.C., Blaine, Minn., to incorporate weight-adjustable lift and pivot technology. JACO, which provides the base carts for Infologix Inc., Bensalem, Mass., puts its carts through rigorous balancing tests and invites customers to visit production facilities to contribute design ideas.

However, Flo Healthcare's Keith Washington, vice president of business development, says the ergonomics issue “tends to be a little overblown.” Flo's prime focus is on applications. Washington says it has been working with companies like MEDITECH; Cerner Corp., Kansas City, Mo.; Siemens Medical Solutions, Milwaukee; and Epic Systems Corp., Madison, Wis.; to develop more clinically oriented carts. “When we talk about carts,” he says, “we're usually not talking about a piece of hardware. We talk about the form factor of a mobile computer.”

Rather than calling itself a device maker, Flo prefers the term “integrator.” The company is banking that, as mobile bedside computing becomes more sophisticated, fewer

providers' IT staffs will want to assemble them in-house. Likewise, Washington wagers, cart companies that stress ergonomics and other hardware-oriented improvements instead of clinical technology likely will soon find it tougher to compete.

That doesn't rattle Gary Brayton, JACO's national sales manager. He says his company can continue to thrive with its focus on perennial cart issues of ergonomics, battery life and cart size, leaving its partner Infologix to fine-tune clinical integrations. “We're a privately held company and in a strong cash position,” he says. “We want to be around for the next 75 years.”

—Kevin Featherly (*kevin\_featherly@mcgraw-hill.com*) is news editor of Healthcare Informatics.



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