

## From the Box to the Bedside:

# The Next Generation of Medication Carts

By Ericka Wilhelms

**FACED WITH THE CHALLENGE OF INCREASING THE SAFETY AND EFFICIENCY** of a decentralized medication distribution system, health systems have sought an answer to the often-asked question: How can we safely and efficiently get medications to the patient's bedside from our ADMs or nursing-unit medication rooms? While implementing bar coding and electronic medication administration record (EMAR) initiatives, hospitals are also in search of devices that can enable those technologies at the point of care.

In response to this challenge, several medication cart vendors have developed products that blend the mobile-computing capabilities of computers on wheels (COWs) and the storage capacity of traditional med carts, offering health systems a secure solution for bar coded point-of-care medication administration. According to Todd Ross, director of marketing and communications for Artromick International, Inc., hospitals "want the maneuverability and the point-of-care computing capabilities of a COW, but they also want the storage and advanced security of a medication cart."

### What's in a Name?

As with any new product category, the market has struggled to name these devices. Some refer to them as "hybrid carts," and others call them "COWs with medication drawers," "medservers," or "mobile computing workstations." Regardless of the product class' name, the devices themselves share some common features.

### Available Features

Equipped with up to 16 medication drawers, these carts have compact footprints, making them easier to maneuver around the nursing-unit floor and easier to bring to the bedside than traditional med carts.

Christiane Brown, manager of information technology and telecommunications at Montgomery General Hospital in Olney, Maryland, where the nurses use Lionville's iCart/pc carts, recalls, "Everyone thought the nurses weren't going to want to push these carts around the unit. However, I haven't heard nurses complain about pushing the carts since the implementation."

Powered by long-lasting batteries and outfitted with on-board computers, the carts also enable bedside bar code scanning of medications, and in conjunction with wireless network connectivity, facilitate the utilization of EMAR programs. Hybrid carts "greatly enhance and facilitate the process of bar coded bedside medication administration," contends Todd Ross. Using Siemens Medication Administration Check, the nurses at Montgomery General scan patient wristbands, their ID badges, and medication bar codes to verify the five rights of medication administration, a process enabled by the hardware and software installed on their iCart/pcs and one that Christiane Brown calls "a wonderful safety check."

Additionally, carts in this product class are height-adjustable, which, according to Brown, makes it "possible for a nurse who is six-feet tall or a nurse who is five-feet tall to push it without stooping or reaching up, respectively. They are comfortable for different body types." In addition, hybrid carts are typically available with a variety of secured user-access options, including keypads and proximity-card readers, as well as security features, such as timed automatic-locking capabilities.

### Drug-Distribution Methods

Tim Friar, vice president of product development at Artromick, which has just introduced the Initi Mobile Computing MedServer, maintains that "there are going to be two methodologies" for applying these so-called hybrid carts to a hospital's drug-distribution model. "Most of them," he continues, "will be used in conjunction with some kind of automated cabinets. The nurse will gather her day's medications from a stationary cabinet, organize them in her cart, and use the cart as a conveyance to the patient room." Friar adds, "Smaller hospitals may use a traditional cart exchange method," whereby the carts' drawers are filled directly by pharmacy.

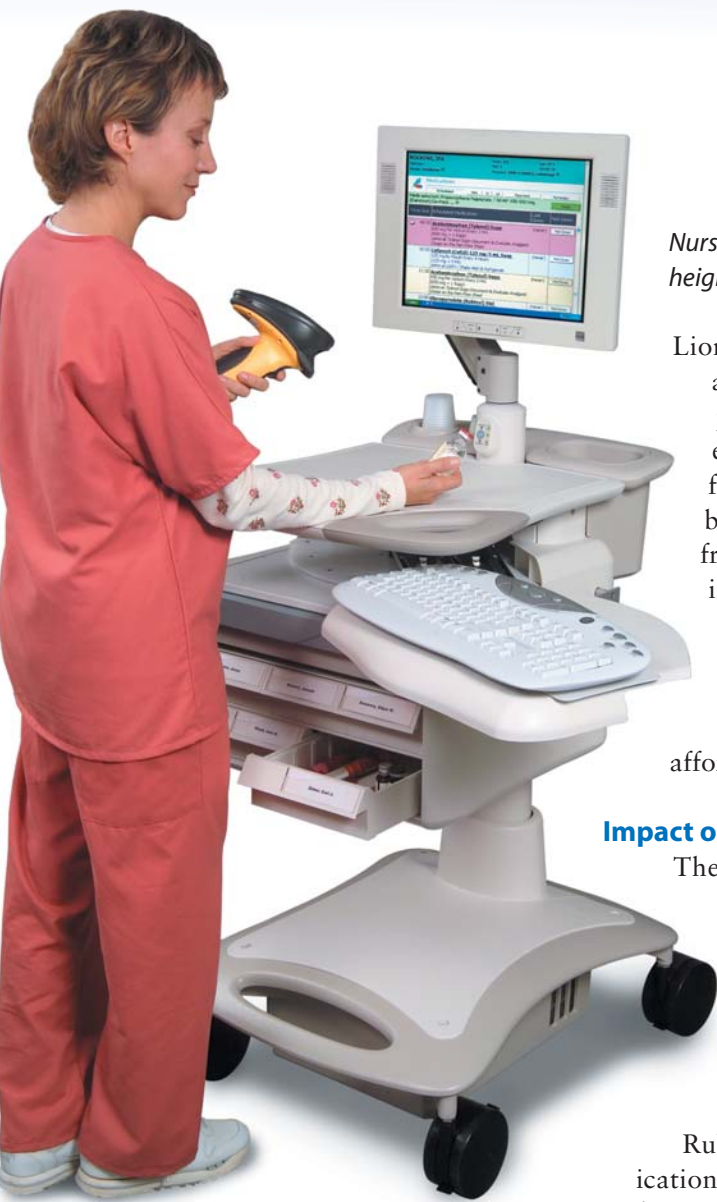
At Lehigh Valley Hospital in Allentown, Pennsylvania, nurses on certain units use Rubbermaid's Mobile Medication Stations, and fill them from larger, traditional med carts in a floor-based med room. After a pharmacy technician stocks the med room carts with robot-filled, patient-specific envelopes, says Marjorie Lavin, Lehigh Valley's clinical services systems specialist, "nurses empty the envelopes into the Rubbermaid drawers, which are all properly labeled with the patients' bed assignments." Lavin adds, with the use of the eight-drawer carts, their nurses, most of whom care for six patients, can use the two additional drawers to "store cups, syringes, and other supplies."

Noting the efficiency the Rubbermaid carts have brought to her facility's drug distribution system, Lavin continues, "Nurses appreciate the saved footsteps. They don't need to go back and forth from the main med room to the patients' rooms to complete their assignments anymore. The workflow is much more efficient." In fact, Lavin concedes, "nurses who do not yet have the Rubbermaid carts on their units often ask, 'When am I getting that cart?'"

Christiane Brown notes that nurses on Montgomery General's busy med surg units use their Lionville iCart/pcs in a similar fashion—stocking them with meds from a stationary, unit-based med cart, and using the iCart/pc as a "delivery device." In fact, Brown contends that one of the carts' "huge selling points" was their compatibility with the stationary



With a compact 18-by-25-inch footprint, Artromick's Initi Mobile Computing MedServer can be brought directly to the patient's bedside.



Nurses can adjust the Lionville iCart/pc's height using an electronic push-button.

Lionville carts' drawers; after being filled in the pharmacy and delivered to the nursing-unit floor, those drawers can be transferred directly from the stationary cart into the iCart, maximizing the medication-administration safety and efficiency this class of cart can afford a hospital.

#### Impact on Pharmacy

The use of hybrid carts can reap benefits for pharmacy, as well as nursing. Jill Green, Lehigh Valley's associate director of pharmacy, contends that the use of the

Rubbermaid Mobile Medication Station has "resulted in fewer pharmacy interruptions." Prior to implementing the carts, nurses would return held meds—those not administered due to a patient's morning physical-therapy session, for instance—to the main med cart for return to the pharmacy. This practice would result in a missing dose later in the day, leading to numerous calls to the pharmacy for new doses. Because nurses are able to fill the hybrid carts with an entire day's medications, Green says, "there are fewer calls to the pharmacy and fewer delays in getting patients to their procedures, too."

#### Purchasing and Implementation Pearls

Encourage nurses to take the carts on a test run before you make the commitment to buy. Marjorie Lavin notes that, at Lehigh Valley Hospital, the IT department brought in two Rubbermaid Mobile Medication Stations before the purchase "just to see how they would work. We wanted the

nurses—the end users—to be satisfied." After all, it will be the nurses that will have to work with the carts, day in and day out, and they should be comfortable with the new drug-distribution platform.

You should also involve your infection-control department in the implementation of the carts, as they will have recommendations for disinfecting the carts and their equipment. At Montgomery General, Christiane Brown notes, "We purchased plastic keyboard skins for the carts, and we wipe those down with disinfectant wipes." In addition, "the entire cart is wiped down with those wipes several times a day. We were very careful in planning for infection-control measures, and we involved our infection-control team in that process."

Brown also suggests securing any wires that connect the carts' power supply to the laptops, scanners, and so on with wire ties, so that they don't loosen or detach during the course of the day. Her IT team also educated nurses to not store too many supplies in the carts' storage drawers, as that practice can "jam up the drawers' locking mechanisms."

Furthermore, because hybrid carts are often implemented along with bar code scanning technology and EMAR systems, prepare your nurses for a significant change in their daily workflow. As Christiane Brown notes, "It's a better workflow, but it was a hard transition." So, before rolling out the new devices, take the time to educate and train your staff on the carts and the technologies for which they act as a platform. Take the necessary steps to ensure a smooth implementation, in order to reap the maximum benefits of these carts and their accompanying systems. **R&P**

*For enhanced security, the Rubbermaid Mobile Medication Station's drawers are accessed via user-specific PIN codes and have a timed auto-locking feature.*



#### Where to find it:

VENDOR/ PRODUCT	READER SERVICE #	WEBSITE
Artromick International: Initi Mobile Computing Med Server	86	www.artromick.com
Lionville Systems, Inc.: iCart/pc	8	www.lionville.com
Rubbermaid Medical Solutions: Mobile Medication Station	47	www.rubbermaidmedical.com