



CARTS

QUESTIONS ANSWERS

from the

CEO

- FLUIDITY
- MOBILITY
- EFFICIENCY

A supplement to

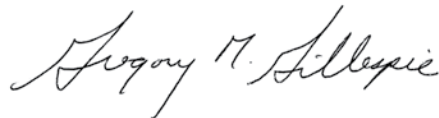
HealthData
Management

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Dear Subscriber:

As the health care business changes, so do the tools clinicians rely on. In just a few decades we've seen information systems emerge, take root and ultimately become a vital part of the patient care process. And entirely new workflows related to electronic record-keeping have caused a flurry of innovation in the arena of medical carts. Today's carts feature clinical care tools and computer hardware that enable them to be used as clinical command centers on wheels.

To provide our readers with a glimpse of how carts are playing an integral role in care delivery, *Health Data Management* presents *Cart Q & A: From the CEO*. Hospitals and physician groups are letting us know they're putting a tremendous amount of time and energy into selecting a cart vendor. We think this supplement will provide an idea of the options and operating philosophies of the best cart manufacturers in the business.



Greg Gillespie
Publisher



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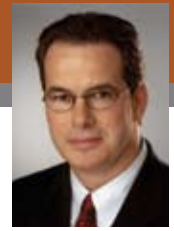
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Bill Shields
CEO

□ ABOUT ARTROMICK

Artromick gives your hospital or nursing home the latest mobile computing carts to successfully mobilize your eMAR and electronic medical health records. Powerful computer systems and cart platforms that offer you the choice to use laptop, thin-client, tablet or the latest all-in-one PC's. Maneuverable and lightweight, Artromick computer carts give you next-generation design to help you enhance workflow and improve patient care.

□ QUESTIONS + ANSWERS

How will mobile carts evolve as their role at the point-of-care becomes more critical?

"The evolution of mobile computing carts has continued over the past several years, but never more than in the past 3-4 years. Mobile computing workstations, often called COWs or WOWs, have grown-up to become much more than a laptop on a stick. Artromick has worked very hard since entering this market to evolve the product category with reliable and robust power systems that give users the opportunity to facilitate workflow through their shift without necessarily having to recharge the cart during the shift. Additionally, we are working hard to further evolve our MedServer products that effectively bridge the gap between dispensing cabinets and the patient. These units greatly enhance workflow, and provide the security and organization critical to reduce potential medication errors. And finally, developing a product that gives the IT team a flexible platform for a variety of hardware options including All-In-One PCs, laptops, thin-client devices or tablets are keys to a true evolution of mobile carts."

What advice would you give to provider facilities trying to measure the return on investment from using carts?

"This is a very common question, and often proves to be elusive to the steering committees. A few key areas to start with and evaluate using mobile computing carts in your facility:

Set your baseline measurements as they pertain to nursing workflow efficiency, medication error rates and overall patient experience and satisfaction. These are some common areas we see facilities looking to improve and measure against ROI with mobile computing carts.

The facility should also compare the 'cost' of mobile computing carts against alternative methods of wireless clinical documentation at the point of care. For example, if a facility is examining the use of wall cabinets with PCs at every bed, simply review the cost of having a PC at every bed, whether occupied or not, with having a mobile computing cart for every 4-beds, or every 6-beds."

What's the most important factor a healthcare organization should consider when selecting a cart?

"The most important factor of all is, without a doubt, to find a mobile cart solution that meets the requirements of ALL the key stakeholders in the facility. From the user perspective—the floor nurse or informatics team—get a cart that is easy to maneuver, lightweight, ergonomically correct and provides reliable power to the computing hardware. For the IT team, select a cart that gives the IT team an opportunity to use their preferred hardware solution. This may call for the cart to accommodate a variety of hardware solutions based on the area of the hospital, but standardizing on a cart platform maintains consistency between departments and across the facility. Next-generation design is also very important. Artromick believes in leveraging the latest technology to enhance the design and function of your mobile computing cart. This translates into greater product value, and helps your facility optimize the efficiency of your IT initiative. •



□ CONTACT INFORMATION



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Artromick Understands Mobile Computing

Artromick understands there is more to mobile computing carts than simply mounting a computer to a battery and wheels. It's about reliability. It's about ease-of-use. It's about providing an open platform of computing and mobility options that gives your facility choices.

That is the foundation upon which Artromick develops and delivers an advanced line of mobile computing cart solutions to the acute care market. From the trim-line Artromick TX20 WorkStation, to the advanced Artromick TX10 MedServer, to our NEW NX10 compact solution developed to uniquely accommodate laptop computers... Artromick offers your IT team a wide selection of next-generation products designed for superior performance.

Artromick understands mobile computing, and what it takes to ensure a successful healthcare IT program in your facility.



TX10

IMC

TX20

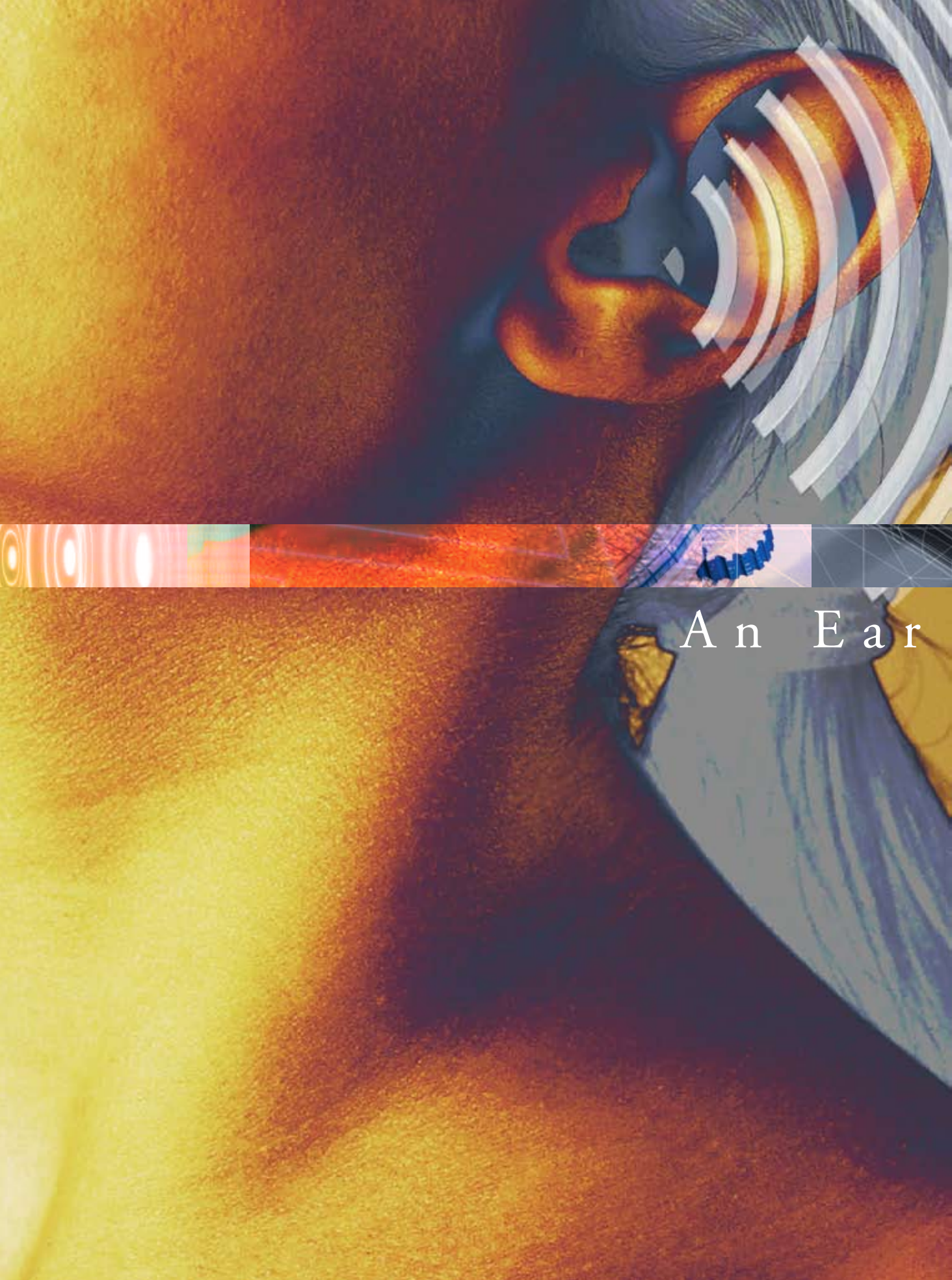
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New!
NX10 Mobile
Computing
WorkStation



An Ear

Clinicians may have once forged their own advancements where medical carts are concerned—diagnostic equipment cords tamed with a coat hanger, stands retrofitted with casters or medicine carts pressed into I.T. service. This is no longer the case in the competitive cart category.



Cart Evolution:

for Innovation

The merger between information technology and healthcare, impacting everything from workflow to human capital, may be rolling down a hallway near you. Unlike the cobbled creations of yesteryear, today's innovations start with an applied science of listening and creating we call design research.

“Design research is most valuable when it is treated as integral to the innovation process rather than as an external activity. To inform intuition, it is important to have team members actively interpret the richness of evidence and discoveries as they emerge,” writes Jane Fulton Suri of

the renowned design and innovation consultancy IDEO, in *The Magazine of the Rotman School of Management*.

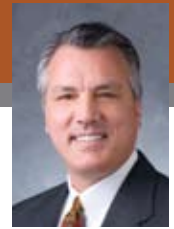
Simply put, innovators don't just gather feedback; they interpret and act on it.

But this wasn't always the case. The initial pioneers of movable medical equipment were doctors and nurses with innovation coming from the field—the Civil War battlefield. According to Alan Hawk of the National Museum of Health and Medicine, Washington D.C., the *Tompkins Wheeled Stretcher* represents one of the first appearances of wheeled medical equipment. The

pressures of war-time medicine, thousands of patients and a need to span distances quickly and efficiently provided impetus for innovation.

Flash forward almost 150 years to the late 1990s when then tech-salesman Fred Calero was tasked with selling tablet computers to hospitals. Calero, now vice president and co-founder of Ferndale, Mich., EnovateIT recounts, “We would consistently go to hospitals and show them a tablet computer. We'd give it to a nurse and say ‘Just think someday this will replace your clipboard.’ She would hand it right back and say, ‘Too heavy—no way!’ So, we contacted the largest

(Continued on page 12)



□ ABOUT COMPUCADDY

Founded in 1987, Diversified Designs began producing the innovative CompuCaddy in response to hospital requests for a high-quality mobile computer stand. The company now serves healthcare, business and industrial facilities in every state, plus Canada and Puerto Rico. Known for exceptional service and ability to customize virtually any aspect of the CompuCaddy to fit the user's unique requirements, the company has a reputation for providing high-quality and innovative mobile carts and power systems solutions.

□ QUESTIONS + ANSWERS

How will mobile carts evolve as their role at the point-of-care becomes more critical?

In 15 years of experience we've watched carts evolve in design and function. We have found that, except for the power system, the end-users have greatly influenced design. I think we'll continue to see users impact design and function. We'll also see carts mirror changes in computer systems and in the workforce. It's also possible that the industry will self-impose regulation in cooperation with the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO). On the forefront of change we foresee more design with privacy and security in mind such as the proximity-based security systems we're exploring.

What advice would you give to provider facilities trying to measure the return on investment from using carts?

Above and beyond ROI, healthcare organizations are faced with the primary goal of improving patient care. It's important to understand, of course, how improving efficiency for a clinician impacts that goal. We feel that carts are a proven entity in this regard due to the positive results we've seen from thousands of customers that have implemented carts in their facilities with very successful results. And, that point is even further supported by the simple

supply and demand theory. Today, this segment of the market helps to support approximately 20 players compared to just 3 of us fifteen years ago.

In our experience, we find that hospitals aren't looking to cut corners; rather, they are much more focused on that primary goal of improving patient care. After all, patients are customers and hospitals want to provide them with the best service possible. Carts are a success factor in the total equation.

“The number one factor to consider now is the power system. It's truly the bottom line because the cart must work every time it is needed.”

What's the most important factor a healthcare organization should consider when selecting a cart?

Without a doubt the end user must buy into the entire project and the selected cart. In our maturing industry it is a given that we offer end-users the generally requested features.

The number one factor to consider now is the power system. It's truly the bottom line because the cart must work every time it is needed. This is the reason we've focused the majority of our energy on power systems in the past few years. We've gone from deploying fairly simple systems to a higher level of sophistication where power is concerned. We take into consideration everything from knowing how they are being used to diagnosing battery issues. Just like luxury cars don't run on two-stroke engines, we feel that a cart should boast good design *and* an excellent power system. •



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[cynergy]

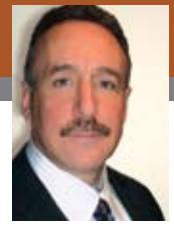
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Steve Bender
Global Director

□ **ABOUT HUMANSCALE**

Humanscale Healthcare provides a wide range of work tools that enhance the comfort and safety of computer users in healthcare environments, including offices, clinical areas, technology-related departments, and mobile applications. A division of Humanscale, the world's largest provider of ergonomic solutions, Humanscale Healthcare offers unique expertise in award-winning design for the healthcare market.

□ **QUESTIONS + ANSWERS**

How will mobile carts evolve as their role at the point-of-care becomes more critical?

Recent cart evolution can be directly attributed to advances in technology. Higher capacity computers in smaller form factors consume less power than before. This coupled with new battery technology, such as lithium ion polymers, means that far greater run times are available in lighter, smaller carts. The result is a cart that is much easier to transport with extended "untethered" use. This makes today's cart very user-friendly, which is critical to effectively deploying EMR systems.

What advice would you give to provider facilities trying to measure the return on investment from using carts?

Today's new technology has dramatically improved patient care. However, until practitioners embrace using the technology, it will not be utilized to its fullest. The most ergonomic, easiest-to-use carts inherently promote more acceptance of the technology, resulting in better patient care and happier, healthier and more comfortable practitioners. Only when the physical needs of the practitioner are met will full ROI of the technology be achieved.



What's the most important factor a healthcare organization should consider when selecting a cart?

Ease of use is the primary consideration. Carts need to move very easily and offer simple, independent height adjustment of the keyboard and monitor to accommodate 99% of employees in both sitting and standing positions. Attention to detail can greatly simplify operation, such as the ability to use the computer from three sides of the cart to easily accommodate maneuvering between beds.

"The most ergonomic, easiest-to-use carts inherently promote more acceptance of the technology, resulting in better patient care and happier, healthier and more comfortable practitioners."

In creating environments which are comfortable for patients, aesthetics matter, too. When a cart is designed to solve functional problems as simply and elegantly as possible, the resulting form will be honest and timeless, and more consistent with overall organizational design parameters. •

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(Continued from page 7)

manufacturer of IV poles...and said here's this tablet, here's this IV pole—can you come up with a solution?" And behold, one of the early predecessors to the technology cart was born, known to some as "computer on a stick."

Calero also had the good business sense to understand that a computer on an IV pole held as much potential as it did room for improvement. His company, EnovateIT and New York-based, Humanscale forged a partnership to marry their disparate core competencies in office furniture, ergonomics and information technology to create a better cart. It's no coincidence that Humanscale was named among I.D. Magazine's top ten "enterprises that help push design forward" along with other design-driven companies including Nike and BMW.

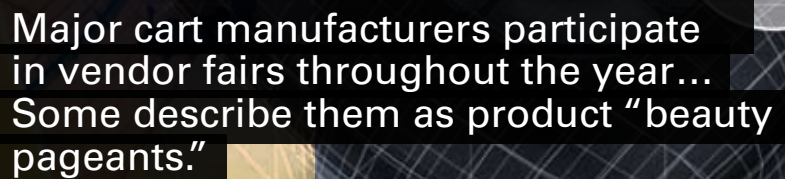
Prior to the partnership, Humanscale was already designing healthcare solutions to meet the requests of hospitals including carts that were easier to push, more ergonomically sound and less taxing on the body.

To synthesize input into advancement, Humanscale's staff of certified ergonomists routinely observes the product at work in the hospital setting, addressing the physical issues nurses face. Steve Bender, global director for Humanscale says, "We never went into the back room and said, 'Let's develop something and tell the world that's how it's going to be.' We start with the customer problem and design a solution based on sound ergonomic criteria." In

addition to ergonomist observation, the company uses day-to-day conversations, vendor fairs and real-time feedback to further understand cart users.

Major cart manufacturers participate in vendor fairs throughout the year. Typically four or five competitors

Brian Swistak, director of business development for Mississippi-based Howard Medical, outlines another difference in gathering customer research from vendor fairs versus focus groups. "Device fairs are on the leading edge [of the decision-making process] because hospitals are just starting to consider this technology



Major cart manufacturers participate in vendor fairs throughout the year... Some describe them as product "beauty pageants."

are invited to display product in the same venue while nurses or other clinicians view and comment on the product. Some describe them as product "beauty pageants."

An unexpected byproduct of the vendor fair, and perhaps in part responsible for industry leaps in quality and design, is the mere fact that manufacturers are not only able to gauge response to their own product, but also hear what end-users like and dislike about competitor products.

"What's interesting is that the vendors hear everything going on depending on room size," says Todd Ross, marketing and business development director for Artromick a Columbus, Ohio manufacturer. "If one product is eliciting a response of, 'Oh, the footprint is so small' as Artromick's usually does, then others take note."

and the impending workflow change in the conversion from paper to electronic." However, in some cases, clinicians in the vendor fair experience can be so overwhelmed by the idea of such massive change that the only feedback elicited is a wide-eyed look of disbelief.

With input from fairs valuable in one sense, Howard Medical also relies on focus groups of experienced cart users to direct decisions on which modular accessories to include in the lineup. "To meet the multiple needs of the hospital environment, Howard's core philosophy is to build to specification," provides Swistak "Howard Medical builds carts in a modular fashion. Emergency room registration, medicine dispensing, bedside charting—we're trying to incorporate many uses into our design to accommodate different departments within a hospital."

(Continued on page 14)

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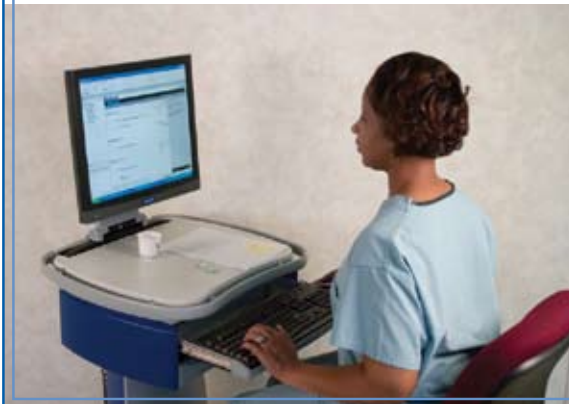
Our **HI-Care** cart is sleek, with a small footprint for easily navigating in the tightest of environments. Its one-touch lift is practically silent when adjusting the work surface for use while sitting or standing. And its unique cable management system virtually hides all cables allowing you to move freely with maximum work space. For more information on our complete line of point-of-care medical carts, visit us online at www.Howard-Medical.com or call us at **877.856.6441**.



Height adjustable for sitting or standing

Bifocal friendly

Walk without kicking the cart



(Continued from page 12)

Stinger Medical, Murfreesboro, Tenn., runs structured beta tests to incorporate feedback into design—for both revisions to existing product and for new product. “We get access to the most current end-use workflows to understand if what we envision is being used the way it is intended,” says Jami Jackson, director of marketing for Stinger Medical.

But understanding the needs of clinicians goes beyond simply asking questions. “Some companies may say, ‘Nurses don’t know what they want.’ But we think it is about asking nurses the right questions,” Jackson asserts. Pointing to an example of interpreting customer research, Jackson describes the industry battle for battery run-time. By changing

cart environment, workflows and propensity of the end-user to follow proper charging protocols.

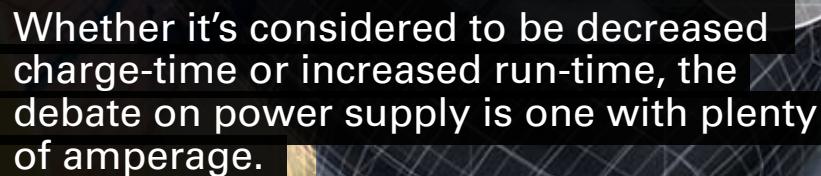
“Nurses don’t like being tethered to the wall because of the cart,” provides Patricia Moore, vice president of marketing and sales with CompuCaddy, Louisville, Ky. CompuCaddy meets this challenge with a DC powered system—yet another possible answer to the run-time challenge.

According to Moore, the two main drivers of power source selection are feasibility and cost. “It’s vital that organizations have a clear understanding of how nurses will handle the charging schedule. Will the nurse be more likely to swap out

“It’s not just about supporting a device 34 or 35 inches off the floor, a cart does this, but as importantly it supports the activity around the device, the entire workflow, to make technology easier to use and more efficient,” says Clif Cannon, vice president of OEM sales for Portland-based Modo. The Modo design firm specializes in medical carts and consults with point-of-care companies to engage the “family of users”—clinicians, service personnel, sales people and IT teams to analyze the entire environment in which the medical cart operates, to uncover unexpressed needs. This creates a two way flow of information with end-users driving design and good design supporting workflow for the end-user.

But the majority of clinicians, I.T. departments and steering committees welcome the efficiencies new carts bring in spite of workflow disruptions in the short term. Todd Ross of Artromick advises clients how “a cart can eliminate 80% of a nurses back and forth in the medication administration process ... because the biggest thing this comes to is that there’s not enough nurses ...”

With the promise of increased efficiency, improved workflows, better patient care and a product that may help bridge a human capital gap—what holds some organizations back? Ross offers, “You have to jump in at some point. It’s like PCs. You can’t wait until development stops to buy a PC. The smart I.T. and smart nursing professionals find a platform that can grow with them and be used for different things.” ■



Whether it’s considered to be decreased charge-time or increased run-time, the debate on power supply is one with plenty of amperage.

the lens on the research data, Stinger Medical reached an understanding of the issue—not as one of increasing a positive, run-time, but rather decreasing the negative of charge-time.

Whether it’s considered to be decreased charge-time or increased run-time, the debate on power supply is one with plenty of amperage; The clear choice only to be seen by the clinicians who evaluate the product and understand the intended

a battery or locate an outlet? And, of course, what are the differences in cost between power systems?” Echoing the entire industry, Moore shares that it’s all about listening to the customer.

While advances in power technology are important, “Clinical acceptance after the sale is done is the ultimate goal,” shares Jackson. Stinger is not alone in this aim, as all cart manufacturers know that the best product *unused* is a failure.



□ ABOUT STINGER MEDICAL

Stinger Medical is the leading manufacturer of mobile clinical workstations and point-of-care technologies for the healthcare marketplace. For the last 14 years, Stinger Medical has helped facilities in the US, Canada and UK solve point-of-care challenges and successfully evolve to the EMR. Stinger Medical is dedicated to creating products that streamline workflow, reduce errors and enable Caregivers and Providers to put their focus back where it belongs...on their patient.

□ QUESTIONS + ANSWERS

How will mobile carts evolve as their role at the point-of-care becomes more critical?

Mobile carts have to evolve from 'data collection devices' into 'care improving tools' or from carts into high-utility workstations. It's about delivering better care, not documentation. A computer-on-wheels does not cut it. How would the quality/safety/efficiency (QSE) of the workflow change if the caregiver had everything they needed for patient care right at the bedside in one trip? How would QSE change if the hospital was assured that every practitioner were performing their duties the exact same way, every time? Carts must evolve into an 'invaluable workstation' by offering so much utility to the user that caregivers desiring to deliver better patient care will not go to the bedside without them. The concept of an 'invaluable workstation' also requires the equipment power supply to evolve in order to run 24/7 with no recharge or down-time. Bottom line is—the cart of the future will be much more than a data collection device.

What advice would you give to provider facilities trying to measure the return on investment from using carts?

Many times the decision to purchase carts is to improve a problem that is most likely something not budgeted; For example, medication dispensing at the bedside to improve medication accuracy. What is the current budget for medication inaccuracy? In the 70's and 80's, US manufacturers were falling behind the Japanese in terms of price and quality. As US manufacturers tried to compete, they found it difficult to justify the ROI on the tools and equipment required to improve. Nowhere in the accounting office was there a

line item for poor quality. Consequently, there was no investment return to reduce poor quality. US firms continued to resist until a few brave companies began to invest in improvements that just "made sense". It takes a strong Board of Directors to allow a facility the time to learn and adapt to improvement ideas in the intangible arena.

What's the most important factor a healthcare organization should consider when selecting a cart?

Let's discuss the factors that should not be considered most important: How pretty it is, how much does it go up/down, how long is the run/recharge time, and how heavy is it. If the facility has not intelligently thought through what they are trying to accomplish, and how many steps it will take to achieve, the workstation configuration is irrelevant. We have seen some 1,500 installations with many facilities believing they can accomplish total EMR in one step. It takes many steps, lots of mistakes, and plenty of lessons learned. Consider these factors: Can the technology chosen be relatively easily adopted by the intended users? Will the staff use the equipment? Does it have enough utility to make the workstation too valuable to leave behind? Have you contemplated the need for modifications/upgrades as you learn what works for you and what doesn't work, to get to that 'invaluable workstation'? •



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