

Work Stations on Wheels Are Workhorses of Clinical Care

The global medical cart/workstation market is expected to reach \$5439.4 million by 2020, with the increased use of electronic health records being the largest driver, according to a recent report (Research and Markets, Global Medical Carts/Workstations Market Outlook 2015-2020; <https://www.researchandmarkets.com/reports/3615944/global-medical-cartsworkstations-market-outlook>). Another market report noted that “Growing need for quick access to mobile electronic health records at the point of care has led to surge in demand for medical carts globally. In addition, increasing demand for improving operational efficiency in the healthcare industry is projected to impact the global market growth of medical carts positively.” This report put the compounded annual growth rate of the market at 11.0% over its forecast period out to 2026 (Future Market Insights; <https://www.globenewswire.com/news-release/2018/01/15/1289141/0/en/Medical-Carts-Market-will-Register-a-CAGR-of-11-0-through-2017-2026-globally-Future-Market-Insights.html>).

Medical equipment carts, also known as workstations on wheels (WOWs) and computers on wheels, are an essential part of clinical care in hospitals, nursing homes, and other long-term-care facilities where patients are bedridden. Carts mobilize vital medications, equipment, and medical records for nurses to access at the point of care or near the patient's bedside. These crucial yet often overlooked tools may be dismissed because they are so ubiquitous; yet, WOWs are highly customizable and ergonomic, with features and accessories that meet a vast variety of clinical care needs.

The global medical cart/workstation market is expected to reach \$5439.4 million by 2020, with the increased use of electronic health records being the largest driver, according to a recent report.¹ Another market report noted that the “Growing need for quick access to mobile electronic health records at the point of care has led to surge in demand for medical carts globally. In addition, increasing demand for improving operational efficiency in the healthcare industry is projected to impact the global market growth of medical carts positively.” This report put the compounded annual

growth rate of the market at 11.0% over its forecast period out to 2026.²

Other important reasons for the growth include the emphasis on preventing medication errors, the growth of telemedicine, and the emphasis on nursing efficiency. Certainly, patient safety is always at the forefront, in the setting of cost reduction measures and rapid access to needed supplies. The report also notes that institutions are under pressure to consider cost, budgets, implementation staff constraints, and space when making such purchasing decisions.

Large and Not in Charge

Carts of the past were heavy, unwieldy, unreliable, and inconvenient. The landscape has changed dramatically, to today's offerings of highly customized advanced mobile solutions for clinical care. These WOWs boast advanced battery technology, modular and adaptable designs, and dependable integration for use throughout any type of facility.

A decade ago, carts, computers, and WOWs were rather notorious for their lack of adoption by nurses. The no. 1 complaint by far was their size and weight. Nurses tasked with pushing carts and implementing their use at the bedside while interacting with patients were often left frustrated. The unwieldy mobile workstations with their limited adjustability and adaptability were further handicapped by their too-small screens. Nurses constantly clamored for practical and real-world workable ergonomic solutions that created a vastly smaller footprint.

Early carts had poor battery-charging capabilities, constantly disappointing users with run times far less than expected. The resulting data loss would cause disruption to the flow, creating more work. The battery technology used in mobile workstations has certainly evolved, and carts today can offer maximum safety and dependability. In the past, sealed lead acid batteries (adding to the cart's weight) were responsible for powering the carts. This changed drastically with the introduction of nickel metal hydride chemistry. Now, the majority of current cart batteries use widely accepted LiFe (lithium iron phosphate) technology.

In 2016, the US Food and Drug Administration released a strongly worded statement with regard to overheating battery-powered carts. This warning subsequently caused a bit of a hiccup in the industry.³ Although the specific issue was with batteries using lithium cobalt technology similar to that found in power tools, the statement did not make the differentiation clear. Now, significantly improved battery

Corresponding author: Bradley Carlson is point-of-care product manager at TouchPoint Medical and can be reached at bcarlson@touchpointmed.com.

The author declares no conflicts of interest.

Copyright © 2019 Wolters Kluwer Health, Inc. All rights reserved.

DOI: 10.1097/JCE.0000000000000371

chemistry with swappable options powers the carts on the market.

Health Care Delivery: The X Factor

With Meaningful Use, created as part of the 2009 Health Information Technology for Economic and Clinical Health Act, the federal government incentivized electronic health records. Now, much about funding this program and other aspects of healthcare delivery in this country remains up in the air. There are many questions to be answered around tying reimbursement to increased efficiencies in care and measurable outcomes.

What is not in question, however, is that nurses and other providers are always “mandated” to deliver high-quality care. In seeking efficiencies, healthcare organizations find value in implementing medical workstations and carts at the bedside. When supplies are accessed, and information is processed as close to the patient-staff interaction as possible, patient care, safety, and the clinical workflow all stand to benefit.

What To Look for Now

When evaluating WOWs, it is helpful to consult the Cornell University 35-point checklist, accessible here at <http://ergo.human.cornell.edu/pub/ahquest/cucompcarteval.pdf>. The Cornell team's checklist is geared toward decision makers and categorizes wheeled cart features that affect its ease of use, safety, and effectiveness. The checklist can be used to evaluate a single cart or to compare multiple cart designs and is organized into 5 sections, including cart maneuvering, work surfaces/data input, screen/document reading, storage/accessories/power, and hygiene. TouchPoint Medical's AccessPoint WOWs meet or exceed all of the items on the 35-item checklist.

TouchPoint Medical is also the only cart manufacturer in the industry that offers lithium LiFe with nanotechnology, making it more stable and longer lasting than most others (eg, 3000 LiFe vs 5000 cycles LiNano, with a 5-year warranty). A wide variety of power and battery chemistry options means the company's AccessPoint line of carts has a power option to meet most workflows and budget (Li-nano battery, LiFe battery, nonpowered with AC cord set, nonpowered). Battery life is a key feature that can make all the difference to how well accepted carts are by nursing and clinical staff, providing them with needed run time and dependability.

Through a licensing agreement with Microban, TouchPoint Medical products are made with antimicrobial additives actually infused into the material instead of others that may be painted onto the surface where the coating can chip off. Fanless charging is an aspect to consider from an infection control perspective as well as noise. When nurses make night rounds, they can know they are being

very quiet and be confident that they are not stirring up particulate in a sterile environment.

It's All About the Ergonomics

Cart designers must consider the importance of the physical requirements of those who push carts. Poor design and ill-fitting solutions are not only frustrating to nurses, but also they can be quite literally painful to use. In a recent review of ergonomic considerations, it was noted that organizations often do not appreciate how important functionality is when choosing workstations and how this in turn limits the equipment's effectiveness. Features in addition to the obvious one of weight, like a low center of gravity and easily adjustable monitors and workspaces, are essential to comfort and stability.

A cart series such as AccessPoint is specifically designed to provide flexibility to meet the changing information technology (IT) or medical equipment management needs across a spectrum of healthcare settings and budgets while also delivering an ergonomic design for caregivers. The carts are rugged, durable, and designed to grow with the changing clinical and IT needs of the facility.

Looking Ahead

Economic realities of the changing healthcare environment are forcing care facilities to be smarter when they implement their cart fleets, and at the same time, nurses continue to request better solutions. Already overloaded as it is, nurses seek ways to eliminate steps in the workflow, not add more. When they can deliver seamless care, interacting easily at the patient's bedside, it enhances the hospital environment. Nursing and health staff job performance are a critical link to ensuring patients enjoy optimal outcomes.

For an institution's IT staff, workstations need to be compatible with other technology platforms, so they can cost-effectively implement the solutions they need. New versatile workstations—and those of the future—are all about adapting to changing requirements as systems and needs evolve. The workstation should elevate the level of care healthcare professionals can provide.

Conclusion

Whether an institution is considering a mobile workstation today or looking toward what will be available tomorrow, patients' outcomes are at the core of the choice. The question to ask is: “How will this fleet of carts help nurses deliver safe, timely, and engaged care to the best of their ability?” Adaptable, flexible carts with elegant, ergonomic designs that have storage space for the necessary in exactly the right place are the key to a successful cart solution.

Five Keys to Medical Carts Success

WOWs can

- minimize technology costs for modern healthcare facilities
- streamline workflows for care providers
- reduce errors and improve patient safety
- promote patient engagement
- outperform other technologies in healthcare IT

Source: <https://www.addondata.com/2018/02/5-key-benefits-computer-wheels-cow-healthcare-hospitals/>.

References

1. Research and Markets. Global medical carts/workstations market outlook 2015-2020. <https://www.researchandmarkets.com/reports/3615944/global-medical-cartsworkstations-market-outlook>. Accessed August 23, 2019.
2. Future Market Insights. <https://www.globenewswire.com/news-release/2018/01/15/1289141/0/en/Medical-Carts-Market-will-Register-a-CAGR-of-11-0-through-2017-2026-globally-Future-Market-Insights.html>. Accessed August 23, 2019.
3. US Food and Drug Administration. Potential problems with battery-powered mobile medical carts in health care facilities that may result in fire: letter to health care professionals. <https://www.fda.gov/MedicalDevices/Safety/LetterstoHealthCareProviders/ucm534566.htm>. Accessed August 23, 2019.