Technology in Healthcare and the Effects on the Mobile Workstation

We have all seen those robotic looking, terminator-like medical technology carts parked in the corners of the hospital hall ways or even in the cart "graveyard", somewhere tucked away in the basement. Common rationales for this banishment are the low adoption rate due to difficulty of use and maneuverability, that the cart made work more cumbersome, the speed that technology changes quickly made the status quo obsolete, and so on. What is really going on here? Why are these carts failing to perform the tasks for which they were purchased? Do we really understand the medical cart market and its offerings? Are we making purchasing decisions based on this year's needs only (short-term value) or also for the next 3-5 years (long-term value)?

There are many medical carts available. Because this market is very fragmented and a standard categorization does not exist, finding the right cart to fit your specific needs can be a daunting task. In Steelcase Health's attempt to understand the market, we divided medical carts into four groups according to supporting of work: All Purpose carts, Technology carts, Supply/Procedure carts, and Super carts.

All-Purpose carts are designed for any environment, clinical and non-clinical, where a mobile work surface is needed. In the clinical setting, these carts can be used to support supplies, laptops, small devices/equipment, or just paperwork. These carts tend to be mostly light weight and simple in design.

Technology carts are designed for any environment to specifically support mobile computing. In the clinical setting, these carts are primarily used for EMR/EHR documentations. They tend to be relatively light weight.

Supply/Procedure carts are designed for the surgical/lab environment. These carts are used for housing supplies, devices, or equipment, and are dedicated to a specific function or procedure. These carts are also characterized by their heightened sensitivity to infection control. Depending on the type of supply and/or procedure these carts support, they tend to be bigger and bulkier than the first two.

Super carts are those that come with everything you could possibly attach to a cart, such as key board tray, mouse tray, monitor mount, portable power, monitor equipment mount, etc. These carts are much heavier and bulkier than the rest on the market.

It is easy to see that the more specific uses the cart is intended, the more "things" are added to the cart, the heavier and bulkier the cart becomes, leading to less mobility and flexibility. If the cart is less mobile and flexible, how would it impact the way cart users/clinicians' work?

After thinking about the usage purpose, we also need to consider the environment where the carts will operate, focusing on macro vs. micro environments. After following up with 10 cart users we encountered in our research, we learned that in the macro environment, the cart stays with the clinician and travels from room to room. Over time, clinicians tend to personalize the cart as "theirs," like their buddy or side-kick. In the micro environment, a cart stays within a room or space (i.e., exam room or patient room), and serves as an additional work surface or work station. Understanding users/clinician's work flow within the macro and micro environment speaks to the level of mobility and flexibility needed for the appropriate cart; a smaller footprint becomes a key consideration here.

With healthcare systems starting to speed up their rate of adopting new technology, technology trends need to play a bigger role in decision making. Your hospital technology needs today may look very different from a year or two from now, especially with upcoming mandated EMRs/EHRs. You may not know the exact system or equipment you will be evolving to, but you need to consider if the system will become more digital instead of paper heavy, and if the technology equipment/devices will become smaller. If "yes" to both of these questions, then do you really need such a technology/task specific carts? How will the technology evolution within your healthcare system impact the users/clinicians' work flow or way of work? You need to consider carts that will provide you the flexibility to transition through various technology and work flow changes.

User purpose, work environment, and impending technology change are good starting points when evaluating long-term value of medical carts, with other key considerations being the level of mobility and flexibility. By making an educated purchase decision and focusing on the long-term value of a cart, those carts "grave yards," hopefully, can be eliminated or prevented.

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