Optimizing Patient Access with Space Saving Built-Ins

One of the most pervasive problems facing healthcare facilities is the question of how to continue to keep patient rooms up-to-date when space is so limited. In some hospitals, particularly those with older construction, the space in patient rooms is so limited that it prevents EHR terminals or medication cabinets from being installed in the room.

Limited space at the point-of-care affects much more than equipment; it also affects the ergonomics of caregivers and may hinder their job performance. In one study, nurses noted several issues with patient rooms not having enough space. The first was the inability to make eye contact with patients while entering the room, which hurts the established patient-caregiver relationship.

The second issue reported by nurses had to do with inadequate space around the bed for equipment, which leads to nurses and other caregivers having to move furnishings around to accommodate their current task--adding further physical demands to an already physically demanding profession.

A third issue reported was a lack of horizontal surfaces to prepare medications, take records at, or place equipment, which seems like an easy problem to fix, if floor space wasn't at such a premium already.

Limited space in patient rooms doesn't only affect caregivers, it also affects the patients residing in those rooms. One new mother, staying at the hospital after giving birth, reported in an article that the hospital's policy of in-room baby care only served to make the already cramped space more so. The hospital's point-of-care wall mounted EHR terminal was constantly in the way. The keyboard hit the bathroom door, and the contact would turn the screen on each time, waking the baby up.

The new mother also reported feeling as though she wasn't in control of anything, citing that she couldn't charge her cell phone, couldn't reach her water on the table, and had no idea where her personal items were. This experience highlights the need for patient rooms designed from the ground up to provide modern conveniences for both caregivers and patients.

Consider another patient's experience: a daughter spending her life at the hospital to ensure that her mother, who was dying from cancer, was never alone. The tradeoffs of spending all her time at the hospital were difficult enough, but found that the cramped quarters of the hospital room made it difficult to find a private space to speak with doctors about her mother's condition.

Patient satisfaction isn't the only metric at risk from cramped patient rooms. Medical errors, infection control, and clinician injuries are more common in these rooms, necessitating safer and more efficient room designs. In addition, new healthcare laws directly link patient outcomes and satisfaction with reimbursement levels, so each and every square foot of room must absolutely deliver profitability.

To further understand the importance of designing a patient's room from the ground up for safety, efficiency, and satisfaction, we turn to a study that explains the design principles most important for designing hospitals and healthcare facilities.
Several specific safety design principles were developed and are intended to address latent design issues and the active failures of current patient rooms. The first of these is to automate wherever possible to increase efficiency and reduce errors on the part of staff.

However, the rooms should also be designed to prevent events like patient falls, complications, infections, and even deaths associated with restraint use. They should be designed for scalability, adaptability, and flexibility, so that the room may change overtime as technology advances, or as the function of the room changes.

Patient rooms should have information readily accessible by the staff in close proximity to the patient, which will help involve patients in their care and promote positive interaction between caregivers and their patients.

Another study mirrors these principles, stating that planners should follow modular concepts of space planning and layout, using generic room sizes and plans as much as possible, rather than opting for highly specific plans.

Each of these rooms should come standard with modular, easily accessible, and easily modifiable mechanical and electrical systems to ensure that the rooms are flexible and will adapt easily to any changes made over time.

In addition, the rooms should be designed in a way that encourages standardized care, encourages healing, provides modern conveniences that facilitate better care and provide a semblance of normalcy to patients, and provide patients and family with privacy. Healing isn't just for patients, it is also for family members, and this is acknowledged by progressive hospitals.

One manner of adapting patient rooms to adhere to these principles is demonstrated in an article by Herman Miller. In some hospitals, medications are distributed not by centralized units on each floor, but instead by locked in-room dispensers that can only be accessed by preauthorized staff members.

In addition to decentralizing medication distribution, commonly needed items like IV poles, pumps, and commodes are kept in each room to eliminate time spent by caregivers leaving the room to find, obtain, and then return to the patient's room. Herman Miller also states that this reduces "turn" time, because the patient room and equipment can be cleaned at the same time.

This underlines how important is it to include equipment in each patient's room, including EHR terminals and medication cabinets. Years of research confirm that patient rooms play a vital, if often overlooked, role in the positive outcomes of patients.

EHR terminals and point-of-care medication distribution cabinets are vital equipment to include in any progressive, flexible patient room design. They allow systems like accessing patient information, updating records, and even distributing medication to become automated. Having the information close at hand at all times may prevent complications or infections resulting from medication errors.

These terminals can be designed for flexibility and are adaptable. A wall mounted cabinet can house medications at one point, and then be redesigned to house equipment later if the purpose of the room changes.

EHR terminals at the point of care may allow caregivers to involve patients in their care, providing them with informational videos or charts to illustrate the topic their nurse or doctor is talking about.

EHR terminals are also incredibly secure, featuring security features like automatic locking and dual authenticity. Wall cabinets essentially become part of the facility's existing network, which makes installation and credential management simple and straightforward.

By integrating these existing control systems into the wall cabinet, the terminals become secure workstations with medications, supplies, and computers readily and easily accessible to personnel with the proper authentication. These systems are flexible and can easily be managed at a departmental level, employing the same RFID cards already used in most facilities.

EHR terminals also reduce preventable medical errors, which have an enormous financial and human cost. For example, in 2008, medical errors cost the United States about $19.5 billion. Of that, 87 percent was directly associated with additional medical costs, including ancillary services, prescription drug services, or inpatient and outpatient care.

Medical errors are also associated with premature death, with the number of estimated related deaths reaching more than 400,000 per year. Serious, but not fatal harm is even more common at around 10 to 20 times more likely.

While EHR terminals are important to reduce or eliminate medical errors, they also affect the workflow of caregivers and help alleviate some of the stresses reported by nurses. Having EHR terminals at the point-of-care reduces the amount of time caregivers spend moving between distribution centers and patient rooms, which increases patient satisfaction scores and HCAHPS scores.

When caregivers are constantly moving between distribution centers and patient rooms, it disrupts their workflow and make him or her feel rushed, resulting in an increased risk of preventable medication errors.

Even with all the benefits and design principles standard EHR terminals meet, they still have room for improvement.

Carsten's newest product, the WALLAroo Fit™, is a EHR terminal that can be hung on the wall or flush mount recessed. The WALLAroo Fit™ will fit into any clinical environment and takes up zero floor space.
The cabinet offers virtually the same usable space as traditional casework or cabinetry, but takes up none of the floorspace, which can then be used for other essentials, or simply to make the room feel less crowded.

Consider that traditional cabinets are between 18" to 24" deep, which takes up valuable floor and wall space, while nearly half of the storage space is unused due to being unreachable.

The WALLAroo Fit™ is modular and customizable, so healthcare facilities need only install exactly what they require. It requires no extra framing and is simple to install within 16" standard stud spacing and common wall depths.

The WALLAroo Fit™ meets all design requirements as well; it allows hospitals to automate, provides documentation to prevent complications, is designed to be scalable and adaptable, places information in close proximity to patients, does not block the view of patients to staff, may be used as a teaching tool to involve patients in their care, and standardizes care.

It follows modular concepts of space planning, will fit into any generic room size and plan, requiring no highly specific room planning to accommodate it, and provides the space with a modular, easily accessed, and easily modified mechanical system.

A flush mount recessed EHR terminal may have prevented many of the issues that caused the new mother's discomfort during her stay; she mentioned that the bathroom door constantly hit the EHR terminal near the bedside, turning it on and waking the baby throughout her stay.

After use, the WALLAroo Fit™ may be closed, receding into the wall and remaining out of the way until it is needed once more. The bathroom door would not have struck the keyboard, turning on the screen and waking the baby.

Use of the WALLAroo Fit™ may also reduce or eliminate the challenges cited by nurses. A recessed, out of the way terminal would neither block the patient from view, nor take up floor space that would then need to be navigated around or furnishings that need to be moved.

When needed, the WALLAroo Fit™ can provide a horizontal surface for prepping medications or documentation, and can easily be put away when no longer needed.

When all of these factors are taken into account, it is clear that Carsten's WALLAroo Fit™ has improved on the design of standard wall mounted EHR terminals immensely in regard to

flexibility and convenient, space-saving terminals or medication cabinets, and would be particularly effective installed older construction, to ease the space burden.

Equally important is the idea of recessed terminals becoming standard in new construction, as they can easily be integrated into current space saving plans and design layouts. With the WALLAroo Fit™, limited space need not be the factor deciding against providing EHR terminals at the point-of-care or implementing a decentralized medication distribution system.

Carstens is proud to have been pioneering solutions to the healthcare field's challenges for over 125 years. As the industry continues to evolve, so too will Carstens continue to provide innovative products to help your facility adapt to the ever-changing field. Standard EHR terminals, point-of-care medication cabinets, and the new WALLAroo Fit™ are some of Carstens most innovative products.

All Carstens products are made in the USA and are designed to facilitate communication between clinicians and patients, reduce costly medication errors, improve the workflow and efficiency of clinicians, and provide a space-saving solution for facilities both new and old.