



Medical Cart Buying Guide

Make the decision easier when selecting the right equipment for your facility.



At Metro, we understand how hard it can be to configure the perfect medical cart. We developed this buyer's to make it a little easier on you, and to give you a better understanding of the features and efficiency you may want to include in your facility's carts.

What's your type?

1. Stationary

2. Moveable

3. Mobile

First, we're going to explain the different types of medical carts and individual features each could benefit from.

1. Stationary Carts

The stationary cart has wheels but doesn't really get moved around the facility much (i.e. patient bedside cart). These carts typically house general supplies and are often in areas accessible to patients and visitors. One important factor you should consider in choosing these carts would be their noise level; you don't want the cart to make noises as it is used, especially around patients and family. Trial the cart in advance to make sure the locking mechanism is not loud, and any alarms or beeps are adjustable. Another consideration for these carts is the amount of floor space they take up. It can be difficult to move around a room with carts that take up too much of the walking area, so be sure to evaluate the amount of supplies you will really need, as too much may put you into a cart that is oversized for the space. The vertical height of the unit is also an important factor to consider. Do you want a waist-height cart your staff can use as a workspace? Or, do you want a shorter unit that will fit under a counter? A smaller caster diameter, i.e. 3", becomes a viable option to reduce the height, since mobility is not a primary requirement. These



are important questions to ask when considering the height of your cart. It is best to go into cart buying with measurements of the area you plan on storing the unit, so be sure to measure the length, width, and height your cart needs to be. This will make the process of picking or designing your cart a lot easier. Being in the medical field you understand the importance of security, it is a major priority to any clinical environment that medications stay safe and stocked. This is where locking options can be a very important thing to consider. Since these carts may be around the public 24/7, their security is extremely important. Be sure to find the most efficient security option for you. For example, you wouldn't want a key to be the primary mode of access because the carts are used too often, and it would be inefficient to have to use a key to unlock the unit every time that you need something. Instead, consider an electronic locking system. You can use an access code or these systems can include a scanner to read your employee card so you can get access with a simple swipe. This makes it easier to unlock and if desired, track who is accessing the carts.



2. Moveable Carts

The moveable cart is generally a cart with a more defined function vs. a defined location, like a specialty cart in the E.D. or an Isolation cart. They are moved periodically to reposition, restock or relocate. Some things to consider when choosing a moveable cart would be the overall design, the capacity and the security of the unit. It is even more imperative that you get the proper caster size when designing a moveable cart as compared to a stationary cart. These carts move far more often, so a 5" diameter caster is a must for ease of movement. It is also important that you get a caster with a proper brake or total lock. These carts will often be left in hallway and other areas where they could get bumped and accidentally moved out of position. They may also be left in a more vulnerable position. A cart designed from polymer material is more resistant to scratches and dents than a painted metal cart. It is important that the cart maintain not only its function over time, but its appearance as well, as patients and their families will correlate the appearance of the equipment that clinician's use with the quality of care that they deliver.

The **footprint** of the unit is yet again a large factor to consider. It is especially important that you take into consideration all of the locations these carts may be positioned. The cart may be stored in area with ample space, or may again need to occupy available storage space under a counter, but where will they need to be used? Will they fit next to a crowded bedside? Will there be sufficient space to get around the cart in a busy corridor? Be sure to find a cart that utilizes the spaces it will be used efficiently so you don't need rushed medical staff tripping over carts trying to get to where they need to be.

Storage density may play a larger role. You need to analyze the equipment that may need to be used and the supplies that may be required. Contrast those needs with the areas the carts would be used to determine if you can go to a larger a cart or accessorize vertically a narrower cart. An overbridge is a great accessory to not only add more storage capability for both equipment and supplies. It can also keep supplies and equipment handy, near the worksurface Explore your options to ensure the cart has enough space to hold every supply a nurse or doctor might need for that specific application.



The final thing to consider when buying a moveable cart is the **security feature**. These carts are in busy areas being passed by people all day long, so, it is imperative that the life-saving supplies stay safe. To accomplish this, consider adding security mechanisms to your cart. Since these carts tend to hold more expensive medical supplies, an electronic security system would be a good fit. The electronic system can help you see who accessed the cart, and keep all of the contents safe from anyone who shouldn't have access. It is also a great choice because it is quick and easy, a simple swipe of an ID card and the practitioner can get anything they need easily and quickly to help their patient. For a complete in-depth look at the best security options, our guide to cart security and locking can be found on page 5.



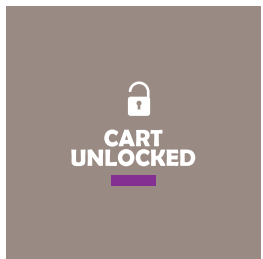
3. Mobile Carts

Mobile carts, like crash carts and traveling anesthesia carts, need to be able to move fast, take a hit, and perform at the highest possible efficiency level.

These carts are constantly in motion, going hurriedly from point A to point B. The constant movement and repositioning makes it imperative to give these carts proper casters. 5” diameter casters are sufficient for easy movement and overcoming common thresholds. Considering the long distance the cart may travel, steering assist is a must. Ask for swivel-lock or tracking casters. With a flip of a pedal on the caster, it can be locked in one direction for added control. When at the point of use, reverse the pedal, to allow full swivel for easy positioning around the patient – this is the primary benefit that a swivel lock caster has over a permanently rigid caster (e.g., like the ones you see on the handle side of a shopping cart). Ideally, you’d have one on the back of the cart on each side, so it is accessible when pushing from either side. For optimal control, a 5th wheel is essential. On the Lifeline crash cart, this wheel is controlled by the handle used to push the cart. When the handle is grabbed the trigger engages the 5th wheel for optimal steering assist.

When at the code site, and the handle is released the 5th wheel returns to full swivel to provide proper placement and position of the cart. The additional consideration for the caster is the use of a “total lock” caster. A simple brake caster keeps the wheel from rolling. However, the caster can still swivel, meaning the other 3 casters are free to rotate and the cart can move around the pivot point of the brake caster. A total lock caster will not only lock the wheel from rolling, it will also lock the swivel action, preventing the caster from rotating, essentially stabilizing the cart. For best results, two total lock casters should be positioned on the front of the cart, and both should be engaged to help keep the cart as stationary as possible during use. The ideal caster setup would be two total-lock casters in front for convenient access when working at the front of the cart, and two swivel-lock casters in the rear for convenient access when pushing from either side. When a 5th wheel cart is used, no swivel lock casters are needed, simple swivel casters will do.

Security is another important factor in the creation of the perfect crash cart. A crash cart needs to have easy access for emergency situations, but also sufficient security to ensure the integrity of the supplies inside. One solution for this would be a tamper-evident seal, it is easy to see when someone has accessed the cart. If the seal has been removed or broken, it tips off the medical staff that someone was in the cart and that the supplies need to be checked. This is highly convenient in mobile carts that tend to be the emergency high-risk situation carts, meaning staff isn’t going to have time to enter a PIN or use a key to save a person’s life. So when time is of time essence, it only takes a quick break of the seal to give the staff full access to whatever they need quickly.



Continued >>>

Mobile Carts Continued >>>

Another great security option, for non-emergency applications, would be electronic locking. With electronic locking, employees can access the cart with their **ID badge**. This can be highly useful for tracking who accesses the cart, especially in applications where medications, especially narcotics, may be stored, such as in an Anesthesia cart. The electronic lock should have the capability to secure a narcotics drawers separate from the supply drawers. It should also require an authorized user to have two authentication codes for entry. Audit trail software is an added benefit, as reports can be generated to identify personnel that were in the cart and when. This capability helps deter diversion, and when diversion is suspected, helps narrow the scope. In any application where medications, needles, or IVs are stored, inspectors will look to ensure those carts are secure. For crash carts, “secure” is typically achieved when the cart is located in a staffed area in easy view of staff. For other applications, the electronic locks will help, by providing an automatic lock timer. This should be programmable based on normal use, but in any event, provides a safety net, by locking the cart should the clinician be called away unexpectedly.



With any electronic lock, evaluate where they will reside when not in use. Does the area have sufficient outlets to recharge the electronic’s batteries? If not, look for carts that **do not require recharging**. Typically the option is disposable batteries that are commonly available. However, a good maintenance plan should be devised to replace the batteries on a prescribed schedule. Usually this would be an annual event, but daily usage patterns will ultimately determine if it is longer or shorter than a year.



Footprint vs. Storage Capacity:

What you need to know.

Cart Style	Pros	Cons
Wide	More storage capacity and more workspace on top.	Larger footprint and more space needed.
Narrow	Smaller footprint, less space needed, easier to work around, and more maneuverable.	Less drawer storage and a smaller workspace on top.
Tall	Added storage capacity and can fit more storage in a narrower footprint.	Can't be used as added work surface and if too tall, can't be seen over or fit under items on wall.
Short	More convenient for seated tasks and can be stored under countertops.	Holds less supplies and may be too short to use as work surface.



Each cart has very different security needs, but there is one thing between them all that doesn't change... **having proper security.** Proper security helps ensure the right people have access to the correct supplies, and that those supplies are there when they are needed. Here is what you need to know to pick the proper security for your cart:

What's your security?

1. Non-Locking	2. Passive Locking	3. Key Locking
4. Basic Electronic Locking	5. Advanced Electronic Locking	6. Proximity Card Reader

1. Non-Locking

Carts that do not have a locking system are basic supply carts that are not typically located in a public area, meaning there is little concern about stolen or tampered supplies. The supplies that are held in these non-locking units may include gauze, band aids, tapes and other general items that don't have a need for heightened security, or have to meet security regulations (i.e., like medications or sharp objects.)

2. Passive Locking

This style of security doesn't include a mechanical lock, but does offer a visual deterrent or tamper evidence that will keep honest people honest and prevent "borrowing" supplies that otherwise would be forgotten to be replaced. Passive Locking security units include indicators or show operators when a cart has been accessed. This alerts them that they need to check the supplies in the cart. These seals are typically serialized, allowing another level of control. The serial number ensures the seal has not been tampered with or replaced, i.e. if the seal number does not match the tracking log, the cart would need to be checked. That serial number in the log can also be assigned an expiration date based on the earliest date that a medication or supply on board will expire. This type of security is best used in a situation where a cart remains ready on standby for an emergency situation. Crash carts and difficult airway carts would be good examples of carts that can benefit from this type of security. In a critical situation, staff doesn't have time to try and unlock a cart. With a seal intact, the staff is confident that what they need is readily available in the cart. **Passive locking is the level recommended for code carts.** Use of devices, padlocks, key locks, electronic locks, etc., that could create delays or barriers to immediate access to emergency medications and supplies is discouraged and could potentially be interpreted as 'not readily accessible for use' (see PC.02.01.11).





3. Key Locking

Key locking is the most basic form of a mechanical theft deterrent for a cart. This form of security is best in carts that aren't accessed frequently, as it can be a hassle to carry around a ring of keys and remember which one opens which cart, or in situations where the budget is not sufficient for more advanced locking options. However, key locking is still a very effective security method and a good option for controlling cart access in common areas. Key lock options are available to have all key locking carts keyed the same, i.e., the same key will open any of the carts, or keyed differently, i.e., each cart or group of carts will have a specific key that is different from other cart(s).



4. Basic Electronic Locking

Generally, it offers the same benefit as a key lock cart, but offers the convenience to not have to carry or search for the right key. To access supplies, the user is given a code consisting of 4-14 digits, depending on the level of security it requires. This can be a little more advanced than a key lock by offering additional features like auto lock and access denied (i.e., control the number of unauthorized entry attempts).

5. Advanced Electronic Locking

Electronic locking carts are a great fit for larger facilities; systems can hold up to 6000 unique IDs for authorized staff. So, if you want to provide unique IDs to each authorized employee, you can and you can also easily audit the access of staff members when needed with tracking. Advanced features also include the ability to control access to narcotics drawers (with dual credentials), have the touchpad autolock after a set period of time, shut down access for set period of time, after a set number of unsuccessful access attempts, and control these settings conveniently via the optional software. Other options include **wireless capability** (to update the cart settings, users, and extract audit reports, without having to go to each cart) and proximity card readers.



6. Proximity Card Reader

Being able to unlock a cart with one's own employee badge is the most convenient and quickest (un)locking option. The proximity reader is typically an upgrade accessory option to an electronic lock. To access a cart with an employee ID badge, the employee and their badge would need to be added to the cart as an authorized user. Once entered, the electronic locking system will recognize the card scan as an authorized user and will unlock the cart upon scan. The electronic lock also keeps track of who accesses the cart for download to the software. The use of employee IDs not only provides a big convenience in not having to carry a key or remember a code, it also eliminates sharing of access codes, thus increasing the security level of the cart. When considering the use of the employee badge, careful planning is needed. All individuals who need access will need to be loaded to each cart. **Wireless connectivity** becomes a huge time saver allowing you to add and remove users as needed by simply making the changes in the required software, which will then sync to each cart.



Power & Computing

One powerful way to improve the workload and overall efficiency in a hospital is the addition of power and mobile computing. Here are just a few reasons to consider putting a computer in your future cart designs.



Adding computing options to your supply cart make it easier for nurses to treat patients by providing access to their supplies as well as the patient's record from one device. Adding a power supply and computer to a treatment cart...

- Enables clinicians to go to the patient's bedside without having to bring both their supply cart and their workstation on wheels
- Eliminates the need for the clinician to leave the bedside to retrieve a supply or access/update a record
- Avoids having to find an outlet to power a computer
- Provides the ability to immediately begin working with the patient vs. booting up a computer
- Ensures the latest data is readily accessible at the point-of-care

Other options exist but have their challenges...

- Workstation on wheels provide a computer but do not offer practical storage for supplies
- Non-powered carts can be used, but leaves staff reliant
 - On the laptop's power
 - On using an undersized screen on a laptop
 - Finding an outlet if using a CPU and monitor or All in One and rebooting at each stop
- In room, wall mounted computers can be inconvenient, clumsy, and not always ideally accessible for use
 - Clumsy to use
 - Not always ideally accessible for use
 - Can be disruptive to maintain to maintain/repair

Continued >>>



Power & Computing Continued >>>

Certain applications demand this combined solution

- E.D. requires a cart with supplies and patient data during peak times, when treating patients overflows into the hallways, and disrupting patients and care in the treatment bays is not acceptable.
- I.V. Therapy is typically done in areas where drapes are used to separate patients and provide privacy. Wall mounted solutions are not an option, and the workstation on wheels cannot carry all of the necessary supplies to prepare and start an IV.
- Medication delivery often involves rotations beyond 4-6 patients, requiring a traditional medication cart. The Electronic Medication Administration Record (EMAR), has been established as the point of care protocol for administering medications to the patient. Having a computer and barcode scanner is a must on the medication delivery cart.
- Anesthesia is not administered solely in the O.R. When the need arises outside the O.R. a fully stocked Anesthesia cart must be capable of not only traveling to other departments, but it must be fully stocked with the supplies, medications and a powered computer ready to accept updates to the anesthesia record.

These scenarios fit many more applications throughout the facility. Technology and information play a tremendous role in patient care today more than ever. The carts used to support patient treatment must be capable of integrating these capabilities into their design, to help continue drive clinician efficiency which will foster improved patient care and higher patient satisfaction.

Finally, cart selection should be planned out and include stakeholders that will be involved over the life of the cart, including...

- IT/Security that provide integration of technology and employee credential information
- The owning department that will purchase the cart
- Biomed or maintenance that will maintain the cart
- And most importantly, the staff that will use the cart

The cart should be reviewed for...

- Configuration flexibility for size and accessories
- Organization
- Locking capabilities
- Integration capabilities
- Expected life and/or maintenance requirements
- Noise levels
- Maneuverability
- Special features like:
 - Antimicrobial properties
 - Multiple person access
 - Performance against scratches, dents, corrosion

Makes sure you know what you want, and more importantly what you need, as what you decide on should be in use for at least the next decade.

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