Thinking of Buying...A Surgical Boom

What to consider before you suspend equipment and monitors from your OR ceilings.

Edited by Lynne Ingle, RN, MHA, CNOR lynne.ingle@gbainc.com

Surgical technology is ever-evolving, but evolving technology tends to take up space. As a result, the new equipment that brings advances to your procedures may also threaten to clutter and cramp your OR.

Equipment management systems, commonly known as booms, offer a solution. Developed to reduce the spaghetti of cords and tubing on the floor and put equipment and services within easy reach, they help to increase the amount of working space in the OR and improve ergonomics for surgeons and staff, while helping them manage patient care more effectively.

But that's only if they work well for your own surgeons and staff, in your own OR. Since many managers describe the boom purchasing process as a difficult one, here's some advice to make sure you get the right boom for your facility.

Before the boom

As with the purchase of nearly any piece of capital equipment, it is essential to conduct an objective assessment before you begin your boom shopping. Be able to spell out exactly why your facility needs a boom and what purposes it will serve. Don't rely only on the suggestions of vendors or the opinions of facilities that have recently installed the equipment. To help you better anticipate what will be required, involve the clinical staff in the decision, asking what they'd like to see served by a boom. Also, seek your biomedical staff's input, as they may be able to provide insights through their previous dealings with a manufacturer's equipment and support services.

Your bottom line will likewise benefit if you budget for the purchase based on your clinical needs and plan ahead accordingly. If, for instance, you're considering outfitting more than one OR with a boom system, but your budget doesn't allow all the installations at one time, be sure to place the supporting structure above each ceiling during the first boom's installation (see "Supporting the Boom"). That way, the others can be installed at a later date without major construction.

Supporting the Boom

As with other pieces of capital equipment, such as surgical lights and tables, many equipment management systems are bought and installed during the OR building process. Some booms, however, are retrofitted into older, existing ORs as part of a renovation or technology upgrade. In order to reap the efficiency they can offer, buyers have to keep a few factors in mind.

Unless the boom is a pedestalmounted system, it will have to be supported from above before it can suspend surgical equipment around the OR. (See Accu-Mount and Unistrut product descriptions on pages 91 and 92, respectively.)

When booms are installed during the original construction process, ceilings are built high to account for the equipment. But a retrofitted boom will likely lower the ceiling, given the need for an above-ceiling superstructure, ductwork and space for cables.

Review any plans, drawings and models carefully to sidestep the potential hazards of too-low booms and equipment is interfering with surgery or causing shoulder and head injuries.

Cost is also a critical issue. As with any renovation project, the question of closing an OR — and suffering the accompanying loss of revenue — looms over the installation of a boom and structural support in an existing OR.

As a result, if your budget only allows one boom installation at a time, it may be fiscally prudent to build support over each OR at one time in order to avoid returning to the inconveniences of construction later.

- David Bernard

Try before you buy

Once you've completed the planning and budgeting, you're ready to review the vendors with suitable products on the market. In the interest of compatibility, you might want to begin your review with the vendor who's supplying or has supplied your surgical lights, if you're pleased with that product. You'll also want to consider how responsive and complete each vendor's technical support is, including whether they offer any form of staff education.

I can not overstate the importance of conducting site visits with prospective vendors and making a decision based on hands-on experience at facilities that have had enough experience with a boom to know their way around it. Typically, a facility will discover all the issues they're going to encounter with a boom within six months.

A recent *Outpatient Surgery Magazine* survey found that dissatisfied boom users' most common complaints involved difficult maneuvering, insufficient arm reach and poor adjustability. Make sure that you not only look at the equipment installed in other ORs, but handle it yourself in order to judge the ease of movement, steering and brakes.

Talk with the staff who work with the equipment every day, and remember to ask the question, "If you had to do this all over again, what would you do differently?" It's a question that's extremely relevant to booms.

What goes where?

Once you've determined which manufacturer will supply your boom, the vendor will develop drawings to show its placement. These plans may include 3-D modeling to better review whether its location and motion conflicts with any other equipment in the room.

A visual model is especially helpful, as booms cannot be considered without also considering lights, flat panel monitors and the integration of audio-visual components. It is critically important that the ceiling placement of the boom doesn't conflict with the lights. Additionally, when equipment that was standing on the floor is now hanging from the ceiling, there must be sufficient room for a supporting superstructure above the ceiling and for the cables that feed the power.

In your consultations with your clinical staff, you may have heard plenty of suggestions about what equipment could be mounted on the boom, but just because something could go on the boom doesn't mean it should. The weight capacity of the boom is of course a driving factor here. But you must also consider functional concerns, such as what equipment might work better off the boom.

Along with equipment, you should also determine the medical gases needed on the boom. This usually includes vacuum, waste anesthesia gas evacuation, medical air, oxygen and nitrous oxide. The boom includes vacuum outlets, but it may be beneficial to include other gases such as CO2 for the insufflator and nitrogen for certain power equipment.

This determination can be a plus down the road. Supplying these gases to the boom means that portable gas cylinders are not needed in the surgical suite, decreasing infection control issues and improving employee safety.

Input / Output

You'll also have to account for electricity. Determine the number of electrical outlets and their location on the boom as well as how many will need to be on emergency power, keeping in mind any possible future needs. Also, ascertain the number of circuits that will be dedicated to the boom. This is important in order to ensure that devices such as the electrosurgical unit will not cause interference or static on the boom's monitors.

New medical technologies have made your data needs as important as your electrical ones. Data outlets not only include telephone jacks on the anesthesia boom, but also allow for integration of surgical and imaging equipment as well as audio-visual capability to other locations in your facility, such as conference rooms, for teaching purposes.

Carefully consider the amount of automated technology features that your facility needs. The capability to control items such as cameras, lights, flat screen monitors and stereo systems centrally, from the boom, may be helpful, but must be reviewed in relationship to its cost to the facility's budget.

Future uses

Unless you've made some regrettable errors in your assessment and planning and resign yourself to uninstalling it in frustration, it's reasonable to think that your boom could last you 15 years and outlast some of the equipment it's helping to organize.

That's why it's urgent for you to clearly anticipate your future needs. Don't plan the purchase just for today; plan it for a few years from now as well. Dissatisfied boom users commonly cite a system's lack of shelf or cable space for future, or even present, needs as a reason for their dismay.

In addition to capacity, remember compatibility. It's important to look at "open architecture" as it pertains to the integration of audio-visual components when you're planning your purchase. Equipment needs may change as technology changes, and your choice of manufacturer may change with both, so you'll want to keep an eye on adaptability. Planning for future needs is key, so be certain your vendors really understand and support open architecture to ensure your facility's future equipment capabilities.