Essentials of OR Equipment

"Managing Your OR" focuses on various aspects of aesthetic surgery in the ambulatory surgical setting.

After the aesthetic plastic surgeon finally makes the quantum leap to decide to set up an office surgical facility, he or she may then face some seemingly insurmountable tasks, especially in determining basic equipment needs. This confusion may be compounded further by trying to assimilate the requirements of state agencies, the Occupational Safety and Health Administration, standards of accrediting agencies, and, in some instances, Medicare. Furthermore, the rapid changes in medical technology and governmental regulations dictate an orderly approach to achieve the desired goals without exorbitant expense. Fortunately, abundant resources are available that help to put all these issues into proper perspective. One basic consideration to keep in mind is that, for the most part (Medicare may be an exception), selection of the necessary equipment follows common sense. What is generally needed are those items that any surgeon would consider requisite for the safety of the patient and the surgical staff.

Obviously an operating table or chair that is capable of multipositioning is absolutely essential, along with the appropriate operating room (OR) lighting, movable or fixed. If the operating suite does not have existing ducting to permit the required number of air exchanges, a free-standing high-efficiency particulate air filter that is appropriate for the OR's square footage should be considered. A source of suction (wall or portable) and cautery is also essential. In the event of a power outage in the facility, OR lighting, cautery, and suction should be capable of functioning from the emergency power source for a minimum of 120 minutes. Such emergency power can be supplied by a generator or a battery-powered inverter. In the future, Medicare-approved facilities may be required to use only a generator source. The power source should be available to function within 30 seconds of a power outage; but in Medicare-approved facilities, power must occur within 10 seconds.

The selection of other equipment is dependent on the magnitude of the procedures being performed in the facility. Blood pressure monitors, electrocardiographs with oscilloscopes, defibrillators, and pulse oximeters will be needed for most cases. Clearly, if only local anesthetic is used, the needs are minimal compared with those in facilities that use general anesthetic. In the latter instances anesthesia machines with O₂ analyzers and CO₂ monitoring and temperature assessment equipment are indicated. In addition, medications such as dantrolene, endotracheal tubes and stylets, laryngoscopes, oral and nasopharyngeal airways, and positive pressure breathing devices are a must. Even in those facilities performing procedures on patients under intravenous sedation, many of the aforementioned supplies are necessary in the event of an occurrence of airway or heart-related problems. Coincident with these needs are the basic intravenous fluids, epinephrine, lidocaine, narcotic antagonists, intravenous corticosteroids, atropine, antihistamines, antiseizure and antibronchospasm medications, antihypertensive medications, and vasopressors. Fortunately, many of these resuscitative tools and medications are available through vendors as prepackaged portable units. Once these medications are acquired, the vendors annually will send a checklist to aid the facility in removing outdated medications.

Other less obvious needs include a sterilization system that uses either steam and high pressure, chemical autoclave, or ethylene oxide. (Endoscopic equipment may be handled by high-level disinfection.) All equipment should be subject to scheduled periodic inspections, calibration, and certification by a biomedical technician and such documentation maintained onsite for a minimum of 3 years. To complete a well-organized facility, additional equipment should be considered: wheelchairs, stretcher
(articulated type if the hallways are narrow), scrub suits, caps, gowns, eye protection, Occupational Safety and Health Administration–approved eyewash stations, blood-borne pathogen spill clean-up kits, appropriate hazardous waste and sharps disposal containers, and a refrigerator used primarily for medications that require such storage. Refrigerators require some type of temperature monitoring system that can simply be a thermometer, but, in the case of Medicare-approved facilities, continuous monitoring and recording methods of temperature must be used. Some savings can be obtained by use of portable equipment for both OR and recovery areas (electrocardiographs and monitors) if it is mandated in the facility protocol that only one patient be operated on at a time and that patient be physically discharged from the unit before the next case has begun.

These suggestions should in no way seem overwhelming to those surgeons contemplating establishing an office surgical facility; they follow the same logical approach that surgeons use in all of their cases. In addition, assistance is available through the various accrediting agencies such as the American Association for Accreditation of Ambulatory Surgery Facilities, which provides its members with a Resources Guide detailing many of the sources for some of the required equipment mentioned in this article. ■

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