Your computed tomography (CT) scanner isn’t worth fixing. Or maybe your electrosurgical unit is being replaced with a newer model. Or your facility has just purchased a new imaging system.

What should you do with your old equipment? Throw it away? Recycle it? Donate it to charity? Or sell it?

Every day, in healthcare facilities around the world, medical technology professionals are asked to make decisions about how to properly dispose of unwanted medical equipment.

In this article, technicians, engineers, and manufacturers provide guidance on disposal options and what factors you should take into consideration when recycling, donating, or selling equipment.

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Ultimately, the decision on how you dispose of equipment may hinge on several factors such as:

- The condition of the used equipment
- The financial benefits of selling a piece of equipment
- Liability concerns
- Your time
- State regulations
- The disposal policy at your facility

**What’s Your Policy?**

Experts urge healthcare facilities to have internal disposal policies, with specific provisions that provide guidance on donations to charities, trade-ins to manufacturers when buying new equipment, and sales made through third-party resellers and Internet auctions. Although many facilities already have such
Finding a Home for Unwanted Equipment

policies, the specific provisions and level of enforcement vary significantly from one institution to the next. For example, at St. Thomas Hospital in Nashville, decisions are reviewed by multiple departments to determine if others within the facility could use the piece of equipment. The biomedical engineering department is the last to sign off on the decision. If no one wants it, sometimes the device is kept for spare parts, which can be “far more valuable” than the trade-in value, says Joe M. Howe, manager of biomedical engineering at St. Thomas.

Still, Howe hopes to improve his facility’s disposal policy by developing “a more systematic approach to disposal so that other hospitals within our healthcare system have a chance to claim the equipment.”

At MidMichigan Medical Center, the purchasing department determines what to do with the equipment and the biomedical services department assumes responsibility for disposal. If no one in the hospital wants the equipment, it’s sold.

“But the decision is not always simple or clear cut,” notes Rick Wood, Mid Michigan’s manager of biomedical services. “For example, a piece of equipment that has a high dollar value in the used market would probably be sold or traded-in so the hospital benefits from the decision. If however, the equipment has some used market value but the value and opportunity to improve healthcare in an underdeveloped country is greater, we may opt to donate instead of sell.”

“Furthermore,” Wood adds, “if a piece of equipment is inappropriate or of no value to anyone, we will dispose of it to make sure it is not sold or donated to someone who does not know what they are getting.”

What follows is a closer look at the options available and what factors you should take into consideration.

**Check Points**

What to do with used equipment:

✓ Make sure you receive a written acknowledgement when donating equipment.

✓ When trading in used equipment, ask the vendor if you can remove desired parts for use on other equipment.

✓ Check with local veterinary clinics to see if they accept donated used equipment.

**Selling: Saving Your Facility Money**

As managers face growing pressure to control costs, selling used equipment is an attractive option to some. Sales of used equipment take place through third-party resellers in person, online, and on Internet auction sites. The latter has expanded the demand for and placement of previously-owned equipment.

Intellamed, a company that facilitates the buying and selling of used medical equipment, opened AuctionMart.com in 1999 to provide buyers with access to previously-owned equipment from U.S. healthcare institutions. It works under strict rules of operation, according to Scott Mears, the company’s director of marketing.

“For example, if the product needs to be uninstalled, buyers need to make arrangements and uninstall equipment when necessary. At any time during the auction, the buyer can request additional information and sometimes can view the equipment before bidding. The winning bid must be paid for within one week of the closing date or the equipment goes to the next highest bidder.”

According to Mears, the buyers run the gamut of brokers, refurbishers, and end-users from around the world. AuctionMart provides buyers with complete information about the equipment’s working order, and often offers sellers a higher price for the used equipment.

“Now, hospitals can sell their own retiring equipment. In fact, hospitals can sell units while they are
still in service, and the open market drives its ultimate fair market price,” Mears says.

For some, who have tried to sell equipment on their own, selling used equipment isn’t an attractive option because of the time involved in negotiating bids, administering request for bids, analyzing bids, and making sure that your organization is treated fairly.

“It is so time consuming and the amount you can recover from it is usually so small that it is hard to justify in most cases,” says Joe Howe from St. Thomas Hospital.

Liability issues are also a concern. “We fear a device failure down the line and the legal trail finding its way back to our organization,” says David Stiles, supervisor of biomedical engineering at Long Beach Memorial Medical Center in California. “We require 100% indemnity and most resellers are not willing to offer this clause.”

As a result of these issues, Stiles and Howe are more inclined to donate the equipment than to sell it.

Donations: Giving to Others in Need

Donating medical equipment to non-profit charitable organizations has become an attractive avenue in the last decade, thanks in part to the Internet’s capability to match donors to those in need around the world.

Nonprofit organizations—such as the Liberian Association of Pennsylvania, which represents the war-ravaged Republic of Liberia; and International Aid, a Christian relief agency that provides healthcare support around the world—give new life to used medical equipment. Biomedical equipment technicians (BMETs) who volunteer their time and dedicated staff receive the equipment, refurbish it, and prepare it for shipment overseas.

“It is truly remarkable how the donation of even one simple medical device can improve the level of healthcare to thousands of needy people in developing nations,” says Jim Loeffler, medical equipment procurement manager for International Aid. (See sidebar on “Donating Equipment?”)

As an example, Spectrum Health in Michigan donated patient monitors—containing the patient cables, probes, modules, cabling, and manuals—which were shipped to Ghana, Honduras, Nigeria, Congo, Borneo, Bangladesh, and several other countries.

Although all types of donated equipment are welcome, equipment in high demand include general diagnostic ultrasounds, electrosurgical units, monitoring equipment, operating room tables, anesthesia machines, and ventilators.

Organizations donating equipment can receive a healthy tax benefit for contributing fully operational, useful equipment. “The donation value of equipment is much more than most hospitals realize. For example, the value of a donation adds up very quickly when you consider the fair market value of a large quantity of patient monitors and cabling,” Loeffler says.

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—Jim Loeffler
Often, the goodwill gesture of donating equipment is more than any tax break can offer. For example, after visiting some rural hospitals and clinics in Northern Vietnam, Rick Wood asked a doctor if he could send her a basic doctor’s bag that included an otoscope/ophthalmoscope. “She replied, ‘that would be too good to be true,’” recalls Wood from MidMichigan Medical Center. “The only medical instruments she had was a stethoscope and blood pressure cuffs.”

On another occasion, a doctor in Egypt thanked Wood with tears flowing from his eyes after he received a donated sigmoidoscope.

Donations can also be made to U.S. facilities, including veterinary clinics, some of which cannot afford to purchase new medical equipment.

Although a fully operational device can make a world of difference, that doesn’t mean that charitable organizations want equipment that can’t be repaired. “A responsible and ethical company will ensure the equipment it is donating is operational, fully accessorized with consumables, reusables, and manuals,” says Loeffler. “The donating hospital needs to verify that the charitable organization can handle the donation, and the receiving agency needs to be able to test, accessorize, and convert power (i.e. 220v/50hz).”

International Aid has received unusable equipment ranging from complex lab analyzers that was missing supporting equipment to centrifuges that arrive with broken glass and dried blood on them. Loeffler reminds donors that a mission hospital cannot afford to purchase special parts, such as broken hoses and missing cables. As Loeffler points out, “the cable alone can cost thousands...
of dollars and mission facilities don’t have that kind of money to spend.”

**Recycling: What Goes Around, Comes Around**

Today, the oldest and quickest method of equipment disposal—dumping—can incur hefty fees for recycling dangerous materials. In 1998, the American Hospital Association (AHA) and the U.S. Environmental Protection Agency (EPA) initiated a joint partnership to reduce the volume of waste in hospitals by 50% by 2010. To that end, hospitals and other healthcare facilities now have e-waste policies in place or are in the process of developing them.

Even equipment at the end of its life cycle has value. Recyclers can extract lead and precious metals off circuit boards and grind the plastic hardware shells into pellets. This service, however, does cost the healthcare facility; typically, recyclers charge by the pound of equipment hauled away.

Four pallets of junk can cost $300, says David Stiles, from Long Beach Memorial Medical Center. “A high-end example would be disposal of items such as old x-ray high-tension tanks for dielectric oil. This can run up to $1,200 for disposal. In these cases, we insist that the new installing manufacturer remove and dispose of our old equipment.”

For smaller organizations with fewer pieces of equipment, free recycling sites are now an option in many cities. But companies that need to recycle large amounts of equipment should look for a reputable recycling company that is certified by the EPA and that offers a Certificate of Computer Recycling.

Consider, for example, Medtronic Emergency Response Systems, a manufacturer of defibrillators. When customers trade in equipment to buy a newer model, Medtronic accepts its own products as well as products manufactured by its competitors.

“From a patient safety perspective, we want to prevent old and questionable vintage devices from getting back into the marketplace.”

—Brian Webster
Finding a Home for Unwanted Equipment

**Buyer Beware: Do Your Homework and Save**

If you are planning to buy used medical equipment, do your homework and the results can save your facility a fair amount of money. That’s the advice of biomeds who have purchased used medical equipment.

“With the pressure to save money, it’s an option that we have been exercising more and more often,” says Joe M. Howe, manager of biomedical engineering at St. Thomas Hospital in Nashville. “We often find that we can buy an entire used unit for less than it would cost us to buy a needed repair part new.”

However, before any used equipment is purchased, it’s important to either know the seller or conduct a thorough background check on the seller. It may even require an inspection of the facilities and reference calls to previous buyers.

Intellamed, Inc. assists customers buying refurbished equipment through the Internet. Its MedRFP platform is an online request for proposal (RFP) system that allows a facility to specify equipment and broadcast the RFP to refurbishers and remanufacturers in the country. To help assure customers of the reliability of the used equipment and services it brokers, Intellamed has contractual agreements with these refurbishers, as well as original equipment manufacturers (OEM). “These companies undergo a qualification process to be part of our program, which includes inspections, standards of quality, and required warranties,” says Scott Mears, director of marketing for Intellamed, Inc.

Besides prior due diligence with vendors, the MedRFP platform facilitates the entire transaction with the purchasing client. “The process includes working with both parties to ensure quality in the product, logistics including installation and training, and the financial transaction,” says Mears. For its services, Intellamed receives a transaction fee directly from the vendor, and only after a successful transaction has taken place. For additional assurance, Intellamed gives clients the option to purchase a service contract for the equipment.

“The equipment is 30% below group purchasing organization (GPO) pricing on equipment that can be virtually brand new, both cosmetically, and operationally,” says Mears.

BC Group International, Inc., manufactures test and measurement equipment for the technical-services marketplace; it also provides calibration and repair services for most types of test equipment. In 2000, the company began manufacturing its own product line under the name BC Biomedical.

“In some cases, used or refurbished test equipment can be used to test modern medical equipment, but the end-user must know the limitations of each of those items,” says Ken O’Day, vice president of sales and marketing for BC Group. “There are several questions that should be asked before deciding if an older piece of test equipment will work.”

- Does the test equipment properly test all the functions to the current level required? For example, the older style defibrillator analyzers do not test bi-phasic waveforms, automated external defibrillators, or the pacing functions now commonly available on new defibrillator analyzers.
- What is the repair and calibration cost of the used test equipment? Does the OEM or others still currently support it? For how much longer?
- Is there a new device that may cost less and do more than a refurbished device? You may think you are getting a bargain because the refurbished item is 50% of the original selling price, but there maybe a new device that is a better buy for the dollars spent.
- How old is the test equipment, and is it near end of life?

Brian Webster of Medtronic urges potential customers to do as much research as possible. “If you’re buying equipment from a third-party vendor, you want to have a very good idea where the product has been and how it has been maintained, he says. “You don’t want to buy something that wasn’t well maintained. Be sure you have a good feeling about the equipment.”
Because we cannot vouch for the pedigree of a competitor’s device from beginning to end, we would rather recycle it than have it return to the market through remanufacturing and reselling,” says Brian Webster, vice president of operations for Medtronic Emergency Response Systems. “Even with our own products, if we accept a product on trade-in that we no longer manufacture, we also recycle those.”

“We’ve been aggressive about our recycling because we want to do the right thing for the waste streams,” he says. “But just as importantly, from a patient safety perspective, we want to prevent old and questionable vintage devices from getting back into the marketplace.”

On occasion, you can both recycle and save your facility money. Recently, for example, St. Thomas Hospital in Nashville decided to get rid of a used CT scanner that would have cost more to repair than it was worth on the used equipment market. So the hospital traded in the old scanner for a new one. But before doing so, the biomed department removed the desired parts out of the old scanner for use on another CT scanner that the hospital owns.

“Since most vendors are going to dispose of your trade-in anyway, they really don’t care if you pull the parts out of them to support your remaining inventory,” says Joe Howe from St. Thomas. “This is not the first time that we have been able to keep spare parts and take a trade-in credit on imaging equipment. The key is involving the biomed department before commitments are made.”

Donating Equipment?

Here are some tips to consider:

- The equipment should be useful. Don’t donate what should be recycled instead. It is NOT true that something is better than nothing.
- Make sure the equipment is appropriate for the technology level of the country. For example, don’t send a CT scanner to a little mission hospital in the jungle. It will be a very large, expensive boat anchor.
- If you are not providing all necessary accessories, make sure the recipient has or can obtain them.
- If the donating organization doesn’t have the means to test, reconsider the donation.
- Make sure the equipment is converted to the proper supply voltage for the country.
- Suspend the preventive maintenance schedule on these pieces of equipment.
- Keep track of equipment that has been donated. Annotate the equipment records.
- Make sure you receive an acknowledgement of the donation from the receiving organization.
- When you hear of an organization near you, volunteer! There are many stories about the life-changing experiences of biomeds who volunteer.

Where to Donate Used Equipment

- International Aid—www.internationalaid.org
- Samaritan’s Purse/World Medical Mission—www.samaritan.org
- The Liberian Association of Pennsylvania—www.lapainc.org
- Clear Path International, Bainbridge Island, WA—www.clearpathinternational.org
- Also, contact your local biomed society about other charitable organizations in need of medical equipment donations.