Implants such as pacemakers, defibrillators, artificial joints, metal plates, and dental work have become increasingly common. In the past, these implants were buried, incinerated, or sent to landfills after a death. Today many can be recycled—extracted, processed, and ultimately reused in some form. The metal in surgical and dental implants can be melted down and reconstituted as new implants or as heavy machinery and vehicles. Life-saving heart devices can be sterilized, refurbished and sent abroad to help impoverished patients who cannot afford new ones. Reusing the materials can also help the environment and save valuable natural resources. All of us can make a difference by supporting this recycling.

Metal joints, inserts and dental implants

For more than 100 years, metals have been implanted in the human body to repair or replace joints or teeth, and they have dramatically improved the lives of those patients. However, when these recipients die, their surgical and dental implants are buried in cemeteries or landfills, generating hundreds of tons of hazardous waste every year. Fortunately, many crematory operators have begun pursuing an alternate strategy. After separating the post-cremation metals from the ashes and collecting them in bins, they can ship the metal to an implant recycling company free of charge. The crematory may either receive payment for the metals or have the proceeds donated to charity.

■ The recycling process

The implant recycling companies analyze, sort, smelt and then sell the metals to industry for reuse. Some high-grade metals like cobalt and titanium from joints, plates and screws are sold to manufacturers for machinery like aircraft engines, wind turbines, and automobiles, or they may be refashioned into new joints. The most valuable metals come from dental implants, and they are the biggest source of recycling revenue. Gold and silver can be reused for jewelry, electronics, and new dental implants; platinum and palladium will be recycled for catalytic converters, electronic equipment, medical and dental implants. Lower grade metals can be sold as scrap.

■ Benefits

Without a doubt, metal implant recycling benefits all those involved in the process. For the crematories and recycling companies, this arrangement can be very lucrative. A large crematory could see a six-figure annual return from metal recycling, and recycling companies make excellent profits as well. Many crematories and recycling companies donate some or all of their recycling proceeds to charity. Communities benefit from these charitable gifts and from improved environmental quality. Recycling reduces toxins in landfills, preventing metals like silver leaching into the ground and polluting fresh water. Because recycling reduces the need for new metal extraction, communities enjoy less landscape destruction, soil erosion, water and soil contamination and air pollution from mining. Finally, the bereaved families receive cremated remains free of extraneous materials and contaminants, and the joy of knowing that their loved one could help the environment even after death.

■ How to participate

If you or a loved one has metal implants and wants to join this recycling effort, consider choosing cremation instead of burial so that the implants can be retrieved and reused. Be sure to choose a crematory that practices recycling, or ask your funeral director to do so. If no crematory in your area recycles implants, you could encourage them to begin.

NOTE: If you hope to retrieve a loved one's gold tooth or crown, be aware that it's difficult to arrange and almost never worth the effort or expense. A funeral director is not licensed to perform an extraction and very few dentists would agree to perform the task; even a willing dentist would charge over $500 to extract a gold crown worth about $50. Furthermore, after a cremation, the gold has liquefied and thoroughly mixed with the ashes, so would be impossible to collect.

Pacemakers and defibrillators

Pacemakers are implanted to regulate dangerously fast, slow or irregular heart rhythms, and implantable cardiac defibrillators restore a normal heartbeat after an arrhythmia episode or cardiac arrest. Tens of thousands of these critical life-saving devices are buried when the person dies, or are removed and discarded by funeral directors or crematory personnel before cremation. Although some of these devices are in good working condition, the Food and Drug Administration (FDA) classifies them as single-use devices, and prohibits their reuse in patients in this country. At the same time, between one and two million people overseas will die every year because they cannot afford the $6,000 to $15,000 price tag for implanting a new pacemaker or defibrillator. In response to this overwhelming need, some organizations have found ways to refurbish the devices and allow them to continue saving lives.

■ Recycling for human use

The University of Michigan Medical School collaborates with World Medical Relief to collect used pace-

makers and defibrillators through their nonprofit program "My Heart Your Heart." The pacemakers are inspected and tested; those suitable for reuse are sterilized and shipped overseas to participating hospitals in the developing world. Since the physicians there often waive all charges, many devices can be implanted in impoverished patients at little or no charge.

The organization hopes to prove that with proper processing, the recycled pacemakers are as safe as new ones. If the FDA eventually approves large-scale reuse, thousands more critically ill patients around the world could be saved. Recycled pacemakers have already improved the lives of poor patients in Africa, Asia, South America and the Caribbean. Next, the project plans to assess the potential for defibrillator reuse in under-served countries.

■ Recycling for animal use

Owners of animals with heart disease have few options, since no pacemakers exist specifically for animals. Fortunately, human pacemakers can be successfully implanted in animals, although the cost of a new device can be prohibitive. Using a recycled pacemaker is a good alternative, and can save the owners thousands of dollars. At least two veterinary schools, at the University of Georgia and University of Tennessee, have placed recycled pacemakers in companion animals. At this time, these devices cannot be donated by the general public but are sourced through the local hospital systems.

■ Benefits

The greatest benefit goes to the impoverished patients with severe heart disorders who might otherwise die within the next few weeks or months without this life-saving treatment. After surgery, most are able to resume work and care for their families. Often the donors, or their survivors, are delighted to help prolong the lives and ease the suffering of these patients. In addition, the lives of hundreds of family pets have been saved or extended using recycled pacemakers.

The lithium batteries in pacemakers are considered hazardous waste, so burial or disposal in landfills can cause environmental damage. Reusing the devices helps reduce the millions of tons of medical waste generated each year, and saves the cost of treatment and disposal.

■ How to participate

If your loved one dies with a recently implanted pacemaker, consider donating it to help save lives overseas. Ideally, any donated pacemaker should have at least 70–80% of its original battery life. If you wish to have your own device reused after your death, be sure to tell your family. They can instruct the funeral director or crematory to remove it and send it to be recycled. If you are being cremated, the device will have to be removed anyway to prevent the battery from exploding during incineration; if you are being buried, your family may have to pay a small extra fee for its removal.

To arrange to donate a pacemaker to the "My Heart Your Heart" program, go to their website, *myheartyourheart.org*, and download their consent form. You can also request a postage-paid shipping box or envelope to send the device to the University of Michigan free of charge.

FUNERAL CONSUMERS ALLIANCE

Recycling Implants After Death

Funeral Consumers Alliance™
Dedicated to protecting a consumer's right to choose a meaningful, dignified, and affordable funeral

33 Patchen Road • South Burlington, VT 05403
802-865-8300 • www.funerals.org