



Planning A Battery Recycling Program for Your Health Care Facility¹

What do you do with old batteries? Do you throw them away? If you do, consider this. Many types of batteries, if landfilled or incinerated, can have serious consequences on human health and the environment. Batteries can contain toxic heavy metals, such as cadmium, lead, and mercury. When released, these metals can find their way into the air from incineration or leach from landfills into the soil and water and eventually end up in the food chain. The possible health effects associated with ingestion or inhalation of heavy metals through water, food, or air include headaches, abdominal discomfort, seizures, and comas. (For more information on what is contained in batteries, see "A Guide to Batteries Used in Health Care," www.practicegreenhealth.org)

To avoid disposal costs and environmental and human health effects associated with battery disposal in landfills or incinerators, recycle your old batteries. With proper planning, a battery recycling program can provide for good public relations, increased employee morale, and potential savings from the elimination of battery disposal.

Getting Started

Invite important stakeholders to get involved in a planning team. These may include: hospital department staff from Biomedical engineering, Telecommunications, Safety, Facilities, Community Relations, Communications, Purchasing and Laboratory. Other important stakeholders to consider: State Hazardous Waste or Pollution Control agencies and your hospital recycling contractor(s).

Identify Recyclers

Battery recyclers should be screened to ensure they can recycle your facility's old batteries. Ask about their recycling and disposal practices to ensure they are using environmentally sound recycling methods. Identify the costs associated with the service and frequency of collection.

There are several vendors and resources for battery recycling of single use and rechargeable batteries; some are free and some are not. Use the list in Appendix A to find a sample list of battery recyclers (excluding those for car batteries) that are the best fit for your organization. For a more detailed list, visit

http://www.nema.org/gov/env_conscious_design/drybat/upload/Companies%20Claiming%20to%20Recycle.MARCH2005.doc.

¹ This document is based on Health Care Without Harm's Fact Sheet, "Battery Round Ups"

Listed below are examples and details on how some recycling programs work. Check if your recycling provider can supply printed educational resources (posters, etc) to promote a new recycling program within your facility.

- *Earth 911, www.earth911.org:*
This website offers resources on where to recycle almost any material. Simply enter the material to be recycled and your zip code for a complete list of local resources.
- *Battery Plus Stores, www.batteryplus.com*
Commercial account holders with a Battery Plus Store (for purchasing batteries) may return batteries for recycling. Check with your local store to determine what are acceptable for recycling.
- *Rechargeable Battery Recycling Corporation, <http://www.rbrccall2recycle.org/start.php>:*
The **Call2Recycle**® is a non-profit program administered by the Rechargeable Battery Recycling Corporation (RBRC), a non-profit, public service organization dedicated to rechargeable battery recycling. **Call2Recycle**® offers a free rechargeable battery and cell phone recycling program. RBRC provides all collection containers and collateral materials and pays all shipping and recycling costs – even for bulk shipments, so there is no cost to participate.

How It Works: Sign up, receive a site identification number to receive pre-labeled and pre-paid UPS boxes. Fill boxes (one rechargeable battery per plastic bag) and return through UPS. Tracking reports are available by department or by facility depending on how your facility is registered, and certificates of recycling are available for each shipment.

What Do They Accept? All rechargeable batteries and cell phones are accepted. Call 877-2-RECYCLE for more information.

- *Battery Solutions, www.batteryrecycling.com:*
Battery Solutions provides a nationwide battery recycling service for residential and commercial customers. The service is fee-based.

How It Works: Purchase a recycling kit or container that's right for you and receive it in the mail. Place supplied tape on one end of each battery. Once the container is filled, ship it pre-paid to their recycling center.

What Do They Accept? They accept household batteries, both rechargeable and nonrechargeable, rechargeable battery packs (such as from cell phones, camcorders), hand-held electronics (Ipods, cell phones, etc.) and any other dry-cell battery.
- *The Big Green Box Program, www.biggreenbox.com*
The Big Green Box is an international program that offers businesses and consumers a way to recycle electronics and batteries for a fee. (You will see in Appendix A that several recyclers collect batteries from this collection program.)

How It Works: Purchase the Big Green Box online, fill it and ship it through UPS. Be sure to tape (with electrical, duct or masking tape) the top of each battery before shipping. Plastic bags are provided and up to three batteries per bag. Separate boxes are available for lithium batteries. All shipping fees are included in the price of the box.

What Do They Accept? The Big Green Box is designed to accept single use and rechargeable batteries. You may also utilize The Big Green Box for cellular telephones, pagers, wireless communication devices such as PDA's, MP3's, chargers, portable tools, laptops and any other devices that are designed to operate on battery power.

- **AERC, www.aerc.com**

AERC has five recycling facilities around the country located in Texas, California, Virginia, Georgia and Pennsylvania. They offer recycling services for batteries and electronic waste for a fee.

How It Works: For mailing services, go to www.recyclekits.com and order a recycle kit for batteries. All batteries need to be taped or placed in a separate bag for each battery. Lithium batteries are handled separately. For pick up services, ask if pick up or shipping service is available in your area (if located near a recycling facility).

What Do They Accept? AERC accepts lamps, batteries (kinds accepted vary by facility), ballasts, and electronic waste.

“Kick Off” The Program

Consider an event for employees and family members to mark the beginning of a permanent hospital-wide ongoing battery collection and recycling program.

- **Publicity** – If promotional materials are not available from a recycler, develop internal promotional resources (posters, tent cards for tables, newsletters, etc.) to announce the launch date and how the battery recycling program will work throughout your facility or department. Consider paperless promotional opportunities (emails, electronic newsletters). To enhance your public image in the community, consider developing external media communications.
- **Education** – Provide educational pieces for distribution to hospital workers and their families about battery recycling, including types of batteries used in health care, examples of their use, and mercury content. (Options might include using the guide, “A Guide to Batteries Used in Health Care” found at www.practicegreenhealth.org or the NEMA brochure listed under “Other Resources” below.)
- **Program Maintenance** – Be sure to determine responsibility for maintaining the recycling program and containers.

Track and Share Success

Many recyclers offer a reporting service tracking what and how much was recycled. Request these reports, and be sure to share the results to acknowledge collection efforts, the impacts and benefits of recycling, and any savings in waste costs.

Battery Recycling Laws

Congress passed the Mercury-Containing and Rechargeable Battery Management Act in 1996 to prohibit handlers (collectors, etc.) from disposing of nickel cadmium (Ni-Cd) and small sealed lead-acid (SSLA) batteries. The act made the Universal Waste Rule effective in all 50 states classifying batteries as universal waste. Universal wastes are hazardous wastes that are more common and pose a lower risk to people and the environment. The rule facilitated increased recycling and collection of Ni-Cds and SSLA rechargeable batteries and reduced the regulatory burden and paperwork on battery handlers and transporters. (Note: The universal waste rule does not apply to spent automotive lead-acid batteries which remain as hazardous waste.)

State legal requirements for batteries vary by state. Only one state, California, bans all types of batteries from the waste stream. Listed below are states that ban specific types of batteries from municipal waste and must return the batteries for recycling through retailers, distributors or manufacturers.²

States Banning Disposal of Ni-Cd and SSLA Batteries

Florida	Maine*	Minnesota	Rhode Island
Iowa	Maryland	New Jersey	Vermont

*applies to government, industrial, communications, medical employees, or contractors

States Banning Disposal of Lead Batteries

Arizona	Indiana	Mississippi	North Dakota	Utah
Arkansas	Iowa	Missouri	Oregon	Vermont
California	Kentucky	Nebraska	Pennsylvania	Virginia
Connecticut	Louisiana	New Hampshire	South Carolina	West Virginia
Florida	Maine	New Mexico	South Dakota	Wisconsin
Hawaii	Minnesota	North Carolina	Texas	Wyoming

States Banning Disposal of All Types of Rechargeable Batteries

California	New York
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States Banning Disposal of Cell Phones

California	Maine
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² Data collected from the Rechargeable Battery Recycling Corporation website, www.rbrc.org

Packaging Batteries for Recycling

In January, 2009, the Department of Transportation issued a new rule (49 CFR Parts 171, 172, 173) revising the requirements for shipping of batteries. The rule requires all types of batteries and battery-powered devices to be packaged for transportation in a manner that will not create sparks or generate a dangerous amount of heat.

Suggested options for packaging to meet this performance standard include packaging each battery or each battery-powered device in fully enclosed inner packaging made of non-conductive material (such as a plastic bag), and separating batteries and battery-powered devices in a manner to prevent contact with other batteries, devices, or conductive materials (*e.g.*, metal) in the packaging. Batteries designed with exposed terminals or connectors should have the exposed terminals or connectors protected with non-conductive caps or tape (electrical, masking or duct). Recycling companies require various methods of packaging to meet these requirements so be sure your facility is compliant to avoid any potential liability issues. These requirements become mandatory in January, 2010. To find the latest on these requirements, visit <http://www.phmsa.dot.gov/hazmat/regs> or call the Hazardous Materials Information Center at 800-467-4922.

Other Resources

Pipeline and Hazardous Materials Safety Administration (PHMSA),
<http://www.phmsa.dot.gov/hazmat>

“Household Batteries and the Environment,” Brochure, The Association of Electrical and Medical Imaging Equipment Manufacturers (NEMA),
http://www.nema.org/gov/env_conscious_design/drybat/upload/NEMABatteryBrochure2.pdf

EPA’s Universal Waste Battery website,
<http://www.epa.gov/osw/hazard/wastetypes/universal/batteries.htm>

Battery Council International, <http://www.batterycouncil.org/>

“Used Batteries – Management and Disposal for Businesses,” Environment, Health and Safety Online website, <http://www.ehso.com/battery.php>

“Cell Phone and Battery Recycling Laws in Europe and the U.S.,” INFORM, December 2006.
<http://www.informinc.org/candbre.pdf>

For more information about battery chemistries, please see Practice Greenhealth’s “Guide to Batteries in Health Care,” www.practicegreenhealth.org.

Practice Greenhealth thanks its EPP Supporters for their contributions to the creation of this resource.



APPENDIX A

Sample of Vendors Who Offer Battery Recycling Services (excluding car batteries)

Battery Recyclers	Battery Recycling Collection Companies	Batteries Claimed to Accept											Other Electronics	How Collected? Fee or Free?	
		Mercury-oxide	Alkalines	Lithium (Primary)	Silver Oxide	Zinc air	Rechargeable Alkaline	Lithium-ion	NiCd	NIMH	Small sealed lead-acid	Silver zinc			
AERC* 2591 Mitchell Ave. Allentown, PA 18103 866-447-5177 www.aercycling.com	AERC 2591 Mitchell Ave. Allentown, PA 18103 866-447-5177 www.aercycling.com www.recyclekit.com Contact: John Schlegel at x115	X	X	X	X	X	X	X	X	X	X	X	X	Computers, TVs, microwaves, CPUs, keyboards, printers, radios, mercury-containing devices, dental amalgam, medical devices (i.e. x-ray machines, incubators), non-PCB lighting ballasts, lamps. Don't take anything with antifreeze and freon (i.e. refrigerators). Want clean disinfected material.	Mail in, ship from around the country, or pick up locally in a radius around each of the six locations nationwide. Fee
	Battery Solutions 7266 Kensington Rd Brighton, Michigan 48116 248-446-3001 www.batteryrecycling.com Contact: Justin Jungman Direct: 248-446-5634 justin@batteryrecycling.com	X	X	X	X	X	X	X	X	X	X	X	X	All universal waste including light bulbs, mercury-containing devices, electronics (computers, keyboards, printers, phones)	Mail in a variety of box sizes from 15 to 55 lb. Fee. Quantity discounts. Certificate of recycling goes out with each box received.
Inmetco PO Box 720 245 Portersville Rd Ellwood City, PA 16117 724-758-2800 www.inmetco.com	Rechargeable Battery Recycling Corporation 1000 Parkwood Circle Suite 450 Atlanta, GA 30339 877-2-RECYCLE www.rbrcc.com							X	X	X	X	X	Cell phones	Mail in 20 or 40 lb box. Automatic replacement boxes sent. Free	
Inmetco PO Box 720 245 Portersville Rd Ellwood City, PA 16117 724-758-2800 www.inmetco.com	Inmetco PO Box 720 245 Portersville Rd Ellwood City, PA 16117 724-758-2800 www.inmetco.com	X	X	X	X	X	X	X	X	X	X	X	X	None	Mail in one 30 lb. box. Reorder for new box. Fee

APPENDIX A (cont.)

Sample of Vendors Who Offer Battery Recycling Services (excluding car batteries)

		Batteries Claimed to Accept												
Battery Recyclers	Battery Recycling Collection Companies	Mercury-oxide	Alkalines	Lithium (Primary)	Silver Oxide	Zinc air	Rechargeable Alkaline	Lithium-ion	NiCd	NIMH	Small sealed lead-acid	Silver zinc	Other Electronics	How Collected? Fee or Free?
Johnson Controls Milwaukee, WI (for small sealed lead-acid)	Interstate Batteries 12770 Merit Drive Suite 1000 Dallas, TX 75251 888-USA-4001 Contact: Tim W. (913) 789-9503 http://corporate.interstatebatteries.com/recycling/	Ask	Ask	Ask	Ask	Ask	Ask	Ask	Ask	Ask	X	Ask	No	Batteries accepted depend on location so ask first. Pays you for small sealed lead-acid; fee-based for other batteries; pick up service only
Kinsbursky Brothers Inc. 1314 North Lemon St Anaheim, CA 92801 714-738-8516 www.kinsbursky.com	The Big Green Box 125 E Commerce Street, Ste A Anaheim, CA 92801 (877) 461-2345 www.biggreenbox.com	X	X	X	X	X	X	X	X	X	X	X	Any small portable electronic device that will fit inside 40 lb box	Mail in
Mercury Waste Solutions* 302 North Riverfront Drive Mankato, Minnesota 56001-3548 507-345-0522 www.mwsi.com Contact Jim Hattler Direct: (803) 238-1441	Mercury Waste Solutions 302 North Riverfront Drive Mankato, Minnesota 56001-3548 507-345-0522 www.mwsi.com Contact Jim Hattler Direct: (803) 238-1441	X	X	X	X	X	X	X	X	X	X	X	All universal waste (lamps, computers, monitors, etc.) and mercury containing devices (blood pressure)	Pick up services around the country
TOXCO PO Box 232 9384 Highway 22A Trail, B.C, Canada V1R 4L5 250-367-9882 www.toxco.com	The Big Green Box 125 E Commerce Street, Ste A Anaheim, CA 92801 (877) 461-2345 www.biggreenbox.com	X	X	X	X	X	X	X	X	X	X	X	Any small portable electronic device that will fit inside 40 lb box	Mail in. Fee

* recycle only some items; others are sent off for recycling

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