



MANAGING MEDICAL WASTE

People involved in health care do not usually think of themselves as *polluters*. But there is now little dispute that, in fact, health care does take a tremendous toll on the environment—and potentially on the health of the very communities in which health care organizations provide care. Today we health care providers use 10 percent of all the energy used in the United States. We generate thousands of tons of waste each day—including toxic materials and chemical waste. We continue to rely heavily on the incineration of a large portion of the waste we generate—pathological and chemotherapy waste, as well as tons of regular waste—a practice that makes our organizations a significant source of toxic air emissions and other serious concerns related to incineration.

INTRODUCING H2E

There is good news, however. Hospitals for a Healthy Environment (H2E) is a national program that is ready to provide hospitals across the nation with the framework, tools, and resources they need to change their waste-disposal practices. With H2E's help, U.S. hospitals can become beacons of environmental sustainability and leadership instead of environmental polluters.

H2E has two categories of membership: Hospitals, clinics, long-term care centers, and other facilities join as "Partners." Large systems, health care-related professional associations,

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group purchasing organizations (GPOs), community-based organizations that work with health care facilities, vendors, manufacturers, consultants, and other service providers join as "Champions." Both Partner and Champion organizations pledge to work to meet the H2E goals of mercury elimination, waste reduction, and general environmental excellence.

On the national level, H2E's program includes a comprehensive website (www.h2e-online.org), a "listserv," and free monthly teleconferences for Partners and Champions. All these services are designed to facilitate the sharing of information, so that no facility should have to start an environmental program from scratch.

What about organizations that already have an environmental-protection program—why should they join H2E? They should join because there's strength in numbers. When hundreds—or, better yet, thousands—of health care facilities begin demanding "greener" projects, the market will have no choice but to respond to those demands. If manufacturers are to begin designing less toxic, more durable, and reusable or recyclable products (to mention only a few green attributes), they must first hear from their customers. And the louder the customer's voice, the better.

As a result of requests from their customers, medical products manufacturers such as Welch Allyn have stopped making equipment that contains mercury. GPOs such as Consorta, Premier, and VHA/Novation—all H2E Champions—have removed mercury-containing items from their product lists and have made a public commitment to purchase greener products. AmeriNet, another GPO that has become an H2E Champion, is working with its members to prioritize other environmentally preferable products. If all health care facilities were to ask their GPOs to supply recycled content copy paper at a price comparable



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to “virgin” paper (paper made directly from harvested trees), GPOs would put pressure on paper suppliers to make the change—and markets would begin shifting. (The more hospitals purchase recycled paper, the more they strengthen the market for the recyclable paper they generate themselves. This is called “closing the loop” and is critical to keeping recycling markets strong.)

On the regional and state level, facilities are coming together to create working committees to share information and stretch limited resources. In New Hampshire, for example, a group that calls itself the NH3E (that is, “New Hampshire and H2E”) Committee met last year to brainstorm and prioritize the many issues facing health care environmental managers in the state. Committee members hold their meetings at different facilities; after a meeting, they tour the host facility—especially the trash docks. NH3E’s primary objective is sharing information and discussing opportunities to work together.

Such opportunities vary, of course, depending on the region involved. In densely populated areas, for example, groups of hospitals can work with local recycling haulers to create “milk runs” (scheduled coordinated pick-ups), thereby

increasing service and perhaps even reducing costs through economies of scale. In rural areas, where some services are not available, recyclables and other materials can be “back-hauled” (delivered in trucks that would otherwise return to base empty. Merely by coming together to think out-of-the-box and create innovative approaches, health care organizations begin to create the infrastructure needed to solve long-standing environmental problems.

H2E’s listserv (see **Box**) is one place environmental program managers can go to ask questions and share information. The listserv’s main objective is to allow subscribers to provide each other with practical solutions based on experience. The listserv works best when Partners and Champions participate, so subscribers should not be shy; they should post their questions—but also respond to other subscribers’ questions with suggestions.

Each month H2E hosts a free, one-hour teleconference for Partners and Champions. Recent teleconferences have focused on mercury elimination, disposal of pharmaceuticals, and compliance with the Health Insurance Portability and Accountability Act (HIPAA). H2E posts the teleconference materials online, making it possible for interested parties to review information from past conferences; the HIPAA conference, for example, described how health care facilities can recycle paper in a way that complies with HIPAA. To find these documents or to register for the teleconferences, go to www.h2e-online.org.

Should You Join the H2E Listserv?

Hospitals for a Healthy Environment’s listserv—which can be found at www.h2e-online.org/programs/list.htm—is a communication tool with which local health care environmental leaders can share ideas, information, and programs. All health care organizations currently involved in pollution prevention, waste minimization, mercury reduction, or other related programs are eligible to join.

Using the H2E listserv is as simple as sending an e-mail. Health care environmental leaders interested in subscribing should access the site, read the listserv guidelines, and complete the online subscription form. Subscribers will receive a welcoming e-mail describing the listserv and making recommendations for participation.

Join the Mercury-Free Challenge

A 1998 memorandum of understanding signed by the U.S. Environmental Protection Agency and the American Hospital Association set the year 2005 as the date by which the nation’s hospitals should be virtually free of mercury. However, Hospitals for a Healthy Environment (H2E) has established what it calls the Mercury-Free by 2003 Challenge, encouraging its almost 600 partners (representing more than 1,400 facilities) to eliminate mercury two years early.

H2E wants to give an “H2E Making Medicine Mercury Free” award to any facility that achieves that goal. To apply for an award, go to www.h2e-online.org/programs/award/appls/aw_mm.htm. Award applications are due by January 30, 2004.

ELIMINATING MERCURY

One of H2E’s goals is eliminating mercury from the health care sector by 2005 (see **Box**). Health care facilities across the country have proven that they can maintain high-quality patient care while phasing out products that contain mercury. Science has found chemicals that can be used in clinical equipment instead of mercury. That’s a good thing, because a broken thermometer containing a mere 0.5 grams of mercury can shut down a patient room. A broken blood pressure cuff can release from 70 to 90 grams of mercury.

In one case, a blood pressure cuff was broken in a hospital examination room and the mercury from the cuff fell on the room’s carpet. A housekeeper, unaware of the mercury spill, vacuumed the carpet, accidentally spreading mercury vapors throughout that area of the hospital. In the end, the facility’s leaders were forced to close the area, spending thousands of dollars to clean it up, and dispose of both the carpet and the vacuum as hazardous waste. Readers interested in more information about dealing with such accidents should access H2E’s website section on



"Managing Mercury Spills" (www.h2e-online.org/tools/merc-man.htm).

Hospitals that have not yet conducted a mercury assessment should do so as soon as possible. They should begin listing the clinical items on hand that might contain mercury—for example, thermometers, sphygmomanometers, bougies, and dilators. Mercury can also be found in some batteries used in clinical devices. Fluorescent tubes contain mercury and should be collected for recycling (see H2E's 10-step guide for managing fluorescent bulbs at www.h2e-online.org/pubs/fluorescent.pdf). Look for mercury also in thermostats, gauges, barostats, and other switches. The goal of such an inventory is to at least tag the mercury-containing object and plan to replace it with one that contains none. Facilities that do not take such an inventory risk having an unsuspecting employee or contractor remove a mercury-containing device and toss it in the trash.

Another source of mercury is laboratory and other chemicals. To ensure that mercury products do not make their way back into the facility, hospitals should implement and maintain a purchasing policy that bans the purchase of mercury products unless specifically approved. Such a policy should also include contract language that requires manufacturers and vendors to state whether their products are mercury free.

CUTTING COSTS THROUGH WASTE MANAGEMENT

Every year health care facilities spend millions of dollars disposing of medical waste. *Regulated medical waste* (RMW or "infectious waste") and *hazardous chemical waste* are relatively expensive waste streams compared to *municipal solid waste* (MSW) (see **Box**). RMW is waste contaminated by blood or other body fluids; because it has the potential to transmit disease, RMW must be treated and rendered noninfectious. In a typical hospital, RMW constitutes only a small part (from 2 percent to 12 percent) of the waste generated. Most hazardous chemical waste is generated in the hospital's radiology and other labs; this waste stream, though also small in amount (from 1 percent to 2 percent of the facility's total) is the most expensive to manage. The vast majority of hospital waste (about 85 percent) is similar to that generated by hotels or restaurants: paper, cardboard, aluminum, and plastic. MSW, on the other hand, is waste that cannot be reused or recycled.

H2E urges health care facilities to improve their waste segregation and to implement training and education programs that will not only improve environmental performance but also significantly reduce waste disposal costs. Health care

facilities can, through better waste management, turn an expensive waste stream into a less expensive one, thereby saving hundreds of thousands of dollars. An industry challenged by severe budget restraints and uncertain reimbursements should welcome the savings available through improved waste management.

An effective, sustainable waste segregation plan has four basic elements.

Leadership and Dedicated Resources The most important step a health care facility can take in launching a waste management plan is hiring a coordinator to manage it. Even if he or she is only a part-time employee, such a person will give the facility's plan a dedicated focus. His or her job is to coordinate the plan's infrastructure, policy, and training and education programs.

Because data is one of the most important tools in a waste-management program, the coordinator should also be responsible for collecting, managing, and reporting all waste that leaves the facility. A facility that does not know the extent of its waste stream, or the cost of managing and disposing of that stream, lacks the information necessary to support a waste management plan or justify the purchase of new equipment for it.

All environmental programs require continuous improvement. Perhaps the best thing about coordinators is that they pay for themselves because they watch the facility's "back door"—its waste management practices. A facility that does not yet have a waste management coordinator is almost certainly throwing away valuable resources.

Infrastructure To effectively manage waste, a health care facility must have the right equipment. Of course, many facilities lack the space for additional equipment, so some creative thinking may be required. Here are some suggestions:

- Place a compactor for recyclables in the park-

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Costs of Waste Disposal

The following are the estimated average costs of waste disposal per ton.

Municipal solid waste (MSW)	\$70-\$120
Regulated medical waste (RMW)	\$450-\$1,000
Hazardous chemical waste	\$1,000 or more
Recycling (average for all recyclables)	*

*Although some materials (glass and plastics, for example) cost money to recycle, others (such as cardboard and paper) can actually generate revenue. As a result, recycling is typically less expensive than disposal in landfills.



ing lot. Although not ideal, the compactor will at least launch the facility's waste management program.

- Cut a hole in one of the facility's walls and install a chute down which waste paper, cardboard or other recyclable material can be dumped into a compactor.

- Place a baler on the facility's loading dock for the baling of cardboard and other recyclables.

- Store recycling "toters" (wheeled containers) on the dock or in an enclosed area of the parking lot.

Before launching its waste management plan, the facility should determine which recycling services are available in the area. It should work with neighboring institutions to find out what vendors they are using.

And, finally, container placement and signage is critical to a successful program. To encourage staff participation, the right containers should be put in the right places. It is a good idea to color-code the containers and provide appropriate signage.

Policy A health care facility whose leaders are serious about implementing a sustainable environmental and waste management plan will draw up a statement of environmental principles (for a sample statement, see **Box**). Such a statement will go a long way in attracting the staff support necessary for moving environmental programs forward. A comprehensive waste management plan that includes specific policies and procedures will show staff what is expected of them in carrying out the plan.

Container placement and signage are critical.

Training and Education The facility should also consider instituting mandatory environmental training as part of its orientation for new employee and annual training—including regulatory issues and opportunities for waste reduction—for all employees. Although waste segregation is not difficult to learn, it can be confusing at times. "Gray areas" abound in waste segregation. Hospital staff should routinely wonder whether a particular waste item is considered RMW or not. Indeed, once staff members get used to regularly asking such questions, they will make the right choice.

Along with directing training, the facility's waste coordinator should give refresher sessions in waste management at staff meetings—especially for the staff of departments that aren't doing such a great job properly segregating their waste. The coordinator should also make annual presentations at grand rounds and at meetings for department directors and other administrators.

LAUNCHING A WASTE PROGRAM

Health care facilities that are just beginning to put together a waste management program should look to sister organizations' policies, educational plans, and training materials. Many of these materials are available on the H2E listserv and other websites. Today no facility has to start from scratch. □

For more information about H2E, call 1-800-727-4179.

Sample Statement of Environmental Principles

In an effort to promote healthier communities, both locally and globally, General Medical Center (GMC) is committed to improving environmental management throughout the organization. GMC will manage its operations in a manner demonstrably protective of the environment and human health.

GMC will constantly seek new and innovative ways to meet its environmental goals through conservation, reduction, reuse and recycling programs, and through partnering with others in the community to safeguard the environment.

GMC will apply these principles to achieve optional environmental standards consistent with institutional

goals and financial considerations.

In an effort to respect and protect the Earth's resources, and to minimize environmental damage, GMC will:

- Manage, minimize, and eliminate, whenever possible, the use of hazardous materials
- Use renewable natural resources and conserve non-renewable natural resources through cost-efficient use and careful planning
- Use pollution prevention initiatives to reduce negative environmental impacts
- Minimize the generation of waste through source reduction, re-use and recycling programs
- Conserve energy and improve the

energy efficiency of our operations and make every effort to use and promote environmentally safe, cost-effective and sustainable energy sources

- Ensure the health and safety of our employees by promoting safe work practices, reducing exposure, using safe technologies, and implementing effective emergency preparedness programs
- Provide employees with safety and environmental information through training and education programs in order for them to make work/practice decisions in support of these principles
- Monitor and evaluate our practices as they relate to these environmental principles

—Hospitals for a Healthy Environment

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