Environmentally Preferable Procurement Guidelines for Information Technology (IT) Equipment in Health Care

Part I: The Issue

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Health Care Without Harm and the Computer TakeBack Campaign

Health care providers have an opportunity to influence the market for environmentally sound products by negotiating contracts that ask for products and practices that meet environmental criteria. By implementing the following guidelines, health care facilities can ensure that electronic manufacturers begin to redesign products with a focus on minimizing the use of harmful materials, and take back products at the end of useful life to safely reuse and recycle.

The Environmental and Health Issues

Over the past few decades, high tech manufacturers have produced millions of electronic products that have helped businesses and individuals achieve greater efficiency, convenience and productivity. The health care industry purchases and uses IT equipment in all aspects of its operation. Unfortunately, the manufacture, use and disposal of IT products under the current system, has a broad range of adverse environmental and health impacts.

Due to the higher sales and shorter life spans of IT equipment, electronic waste has become one of the world's fastest growing waste streams. In the United States, it is predicted that between 315 million and 680 million computers will become obsolete within the next few years.[1] Moreover, the average electronic product contains a variety of hazardous materials, such as:

- chlorinated plastics in cable wiring;
- brominated flame retardants in circuit boards;
- heavy metals like lead and cadmium in Cathode Ray Tube (CRT) monitors; and
- mercury in Liquid Crystal Display (LCD) or flat panel monitors.

IT equipment contains chemicals that are known or probable teratogens, persistent bioaccumulative substances, carcinogens, reproductive toxins, endocrine disruptors, and mutagens. Extending the life of IT equipment through upgrades and reuse minimizes the pollution and resource consumption associated with making new equipment. Furthermore, by encouraging the transition to safer chemicals, the health care industry can play an important role in helping to promote more sustainable IT equipment.

It is estimated that 70% of the heavy metals found in landfills (including mercury and cadmium) come from discarded electronic products[2]. When electronic products are improperly disposed of in landfills and incinerators, they can release heavy metals and other hazardous substances that contaminate groundwater and pollute the air. Original equipment manufacturers (OEMs), however, currently bear little to none of the financial burden or responsibility for safely managing discarded electronic equipment at the end of life. **Instead taxpayers, local governments and end users such as hospitals are forced to pay the real costs that accrue from degraded public health and environment.** Establishing manufacturer take-back requirements can help alleviate prohibitive disposal costs and encourage the design of less toxic, alternative products.

Another critical issue is the significant amount of energy consumed by electronic equipment. It has been estimated that over 800 kilowatt hours

teratogenic = linked to birth defects
persistent = not easily excreted from the body
bioaccumulative = magnifies up the food chain
carcinogenic = cancer causing
reproductive toxin = linked to birth defects
endocrine disruptor = disrupts the hormonal system
mutagenic = causes mutations in cells

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of electrical energy (enough energy to supply a typical household for 2 months) is consumed during all the manufacturing steps of the semiconductor devices necessary to produce a single 200 mm wafer.[3] Moreover, the energy consumed by office and telecommunications equipment in the US during 2000 was estimated to be 97 billion kilowatt-hours, which is equivalent to approximately 3 percent of US energy consumption.[4] Most of the energy used to power electronic products comes from fossil fuel-based energy sources, i.e. coal, gas and oil—all of which contribute to global warming and air pollution-and the subsequent degradation of human health and the environment. Encouraging the development of IT equipment that conserves energy can slow this degradation.

The Price and Cost Issues

Hospitals are increasingly forced to deal with the disposal issues presented by electronic waste. Disposal of outdated electronic equipment poses a significant expense and can result in potential liability. Hospitals can minimize these costs by applying a Total Cost of Ownership approach to their procurement decisions. Total Cost of Ownership incorporates the end-of-life disposal costs into the analysis that guides the purchasing decision-making process. This approach encourages purchasing and IT managers to include an electronic product's end-of-life disposal costs in the overall cost for new equipment and to then compare the total costs between various vendors. Since hospitals purchase new IT equipment in large quantities, purchasing managers are in a good position to minimize overall costs by including these end-of-life costs in the overall bid.

Resources

To better understand end-of-life management issues for electronic assets in health care facilities, including the Health Insurance Portability and Accountability Act (HIPAA), please refer to the Hospitals for a Healthy Environment (H2E) document: *A 10 Step Guide to Healthier Choices for Electronic Equipment: From Procurement to End-of-Life* (Going Green 7-01) available at http://www.hcwh.org/goinggreen.

The Disk Sanitization webpage HIPAAdvisory developed by Phoenix Health Systems includes the Department of Defense guidelines and several white papers on electronic data destruction methods: http://www.hipaadvisory.com/tech/disksan.htm

Websites

Silicon Valley Toxics Coalition: www.svtc.org

Center for Environmental Health www.cehca.org

Clean Production Action: www.cleanproduction.org

Computer Take Back Campaign: www.computertakeback.com

INFORM: www.informinc.org

Health Care Without Harm: www.hcwh.org

Hospitals for a Healthy Environment: www.h2e-online.org

Center for a New American Dream: www.newdream.org

Notes

1. National Safety Council. *Electronic Product Recovery and Recycling Baseline Report*, Washington DC.
2. "Computers, E-Waste, and Product Stewardship: Is California Ready For the Challenge," May 11, 2001, *Report For the US Environmental Protection Agency*, Region IX, Pg. 13.
3. SEMI Information website quoted in Silicon Valley Toxics Coalition's Spring 1998 Newsletter.
4. Cole, Danielle (2003). "Energy Consumption and Personal Computers," in: Kuehr, Ruediger & Eric Williams: *Computers and Environment. Understanding and Managing Their Impacts*. Dodrecht, Kluwer Academic Publishers & United Nations University, pages 131-159, ISBN 1-4020-1680-8.

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