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The Nightingale Institute for Health and the Environment

Trustees Bulletin

Environmentally Responsible Health Care

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Consider: *Silver, mercury, dioxin, cadmium, solvents, particulates. run-off, air pollution, EtO emissions. Pesticides, degreasers, adhesives, benzene, toluene, cytotoxic agents. Waste oil, fluorescent light fixtures, paint thinner. Biohazardous waste, hazardous waste, radioactive waste. Water pollution, soil contamination, leaking underground storage tanks, ground water contamination, fish advisories, ozone depletion...* ***what do these things have to do with your health care organization?*** *Read on and find out*

The items listed above are likely to be by-products of the organization where you serve as a trustee. Health care, like other industries, has an environmental impact on the community. While it is true that many wonderful things take place at America's hospitals, it is also true that a lack of attention to the ecological impact hospitals have on their communities is beginning to take a toll on the health of the environment and people.

Most organizations have a mission or vision statement that espouses the intent to protect, preserve or promote the health of the community. While there are many ways that mission is being fulfilled, environmentally, there may be a huge gap. Lets explore this gap and learn how America's health care industry has become cited among the nation's leading sources for mercury and dioxin pollution.

One in every seven dollars in our economy is spent on healthcare. One in every nine workers is employed in health care. Health care facilities are among the most energy intensive commercial spaces in the country. The US EPA has identified medical waste incinerators as among the leading sources of mercury and dioxin pollution. As of 1997 there were nearly 2400 permitted medical waste incinerators, two-thirds of which have no pollution control devices, and of which 5.6 million American children under age 16 reside within 2 miles. Ironically, only one to two percent of medical waste needs to be burned to protect human health, yet many facilities continue to incinerate it, or to incinerate the solid wastes they generate.

Dioxin: What's the Problem?

Dioxin is a toxic substance that is a by-product of medical waste incineration. Dioxin is formed when chlorinated plastics are incinerated in the presence of organic material. Twenty-five percent of all health care products such as IV bags, blood bags and tubing are made with PVC, a chlorinated plastic. When these materials are disposed of by incineration, dioxin is created. Dioxin is released among air emissions and is a component of the ash by-product of incineration. It is an airborne pollutant that travels great distances and is deposited on the terrestrial landscape. Dioxin is then ingested by living organisms consuming plant matter where dioxin is deposited. Dioxin is a "lipophilic" compound, meaning that it is stored in fat tissues of living things. In this way, Dioxin biomagnifies up the food chain.

In June 1998, Consumers Reports published their findings on independent testing of several brands of beef based baby foods, noting that a single 2.5 ounce jar contained over 100 times the EPA's safe daily limit for dioxin exposure.

Health Effects of dioxin range from reproductive dysfunction, immune system effects, endocrine disruption, to cancer. The World Health Organizations International Agency of Researchers in Cancer (IARC) declared dioxin (chemical name: 2,3,7,8 TCDD) a proven human carcinogen in February 1997. Dioxin can exert a harmful impact in exquisitely small doses, measured in the parts per billion.

As mentioned, the US EPA has identified medical waste incinerators among the leading sources of dioxin in the United States. This finding is significant for Trustees to understand, since they serve as stewards of organizations whose primary focus is health and healthy communities. Many health care facilities operate on-site medical waste incinerators or have their waste shipped off-site for treatment in an incinerator. Relatively few members of the health care industry have come to fully appreciate this problem and take actions to correct the situation. Fortunately, this is a problem that can be easily solved by the health care industry, provided that the problem is understood and deliberative actions to correct it are taken. The steps to correct the problem are relatively straightforward. They include the following list of action steps:

- Elimination of all nonessential incineration of health care wastes. (Only one to two percent of health care wastes need to be incinerated to protect public health).
- Enlist support of the health care supply industry to discontinue indiscriminate use of chlorinated plastics (PVC) as a material component of health care devices.
- Establish materials purchasing policies which consider the life cycle analysis of products, with a preference for products which do not create persistent bio-accumulative toxic substances during manufacture, use or disposal.
- Establish criteria to review practices from an environmental perspective, fully understanding the impacts of actions.

Mercury: What's the Problem?

Chances are, you might not perceive of mercury as a hazardous material. Many of us grew up playing with it, delighted by its unusual properties. Mercury is actually a heavy metal with properties toxic to human health. A small amount of mercury can do a great deal of harm. A single fever thermometer can contain as much as a gram of mercury. It only takes four grams of mercury to contaminate a small to medium sized lake, such that the fish in that lake are unfit for consumption by women of reproductive age and children. Mercury is found in many health care products and devices such as fever thermometers, blood pressure units, laboratory chemicals and dental amalgams.

The health effects of mercury can be staggering. They range from neurological to renal effects, and are particularly harmful to the developing fetus. Mercury interferes with normal brain development. This finding is well documented in the literature, and makes a compelling case for health care to retire this material from our day-to-day operations.

Acknowledging the seriousness of the "mercury problem" in health care, the US EPA and the American Hospital Association have come together signing a Memorandum of Understanding to virtually eliminate mercury from health care wastes by 2005. As Trustees you need to inquire about the status of your organization's efforts to respond to the initiatives set forth in the Memorandum of Understanding. See http://www.aha.org/MemOfUnder.html.

Energy Use: What's the Problem?

Health care organizations are enormous users of energy. Facilities are open seven days per week, twenty-four hours each day. The air handling systems, temperature control devices, elaborate diagnostic and technical equipment, and lighting often remain on continually. Further, there are energy back-up systems in the event of a power failure. Where does the energy that powers your facility come from? Is it from coal fired utility plants? Nuclear power? Hydro projects? Renewable sources? The pollution associated with energy generation is immense. Most energy is derived from fossil fuels, a nonrenewable resource.

Health care organizations have the opportunity to increase their attention to energy conservation. These measures benefit the environment, and reduce costs. The US EPA has many programs that foster this type of activity, providing incentives, rewards, and technical assistance. The Green Lights program, Climate Wise, and Climate Neutral are several federal programs health care organizations can adopt and benefit from. Health care organizations can become prudent consumers of energy, and take advantage of opportunities to invest in renewable energy and support energy conservation, thus reducing the adverse impacts on the environment and health.

Waste Management: What's the Problem?

Who manages waste at your facility? As a result of the increasing array of products and technologies, health care has developed one of the most complex waste streams in American industry, having as many as ten or more distinct waste streams. Many health care organizations are recognizing this emerging reality, and hiring skilled waste managers to oversee and ensure that health care wastes are properly segregated at the source and managed responsibly throughout the system to avert occupational hazards for employees and environmental and public health hazards to the greater community.

Complexity is the Culprit

In case you haven't inspected your facility's waste stream, this list might give you an appreciation of the types of wastes and emissions your facility generates each day.

- Radioactive waste
- Hazardous wastes (chemicals such as mercury, solvents, degreasers, cytotoxic agents)
- Biohazardous wastes (blood, body parts, cultures and stocks, used needles and scalpels)
- Solid waste (food waste, paper, cardboard, metals, glass, plastic, mixed materials, newspapers, pharmaceuticals)
- Recyclable wastes (kitchen grease, paper, cardboard, glass, aluminum, steel, glass, plastics, grease, fluorescent lamps, unused supplies)
- Compostable waste (organic wastes such as food preparation waste, low grade papers)
- Wastewater (from all operations, showers, toileting, run-off from parking lots, storm water runoff, pesticide residues from lawn care and pest management)
- Air emissions (from boilers, Ethylene oxide units, transportation, chemicals)

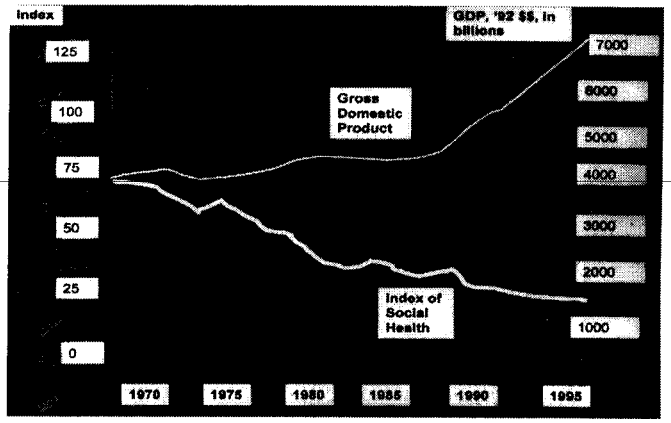
Waste management in hospitals needs to be embraced in the quality improvement framework that your organization follows. In this way, analysis can be conducted to determine the root cause of waste problems and design efficient systems with adequate resources, to ensure that the by-products of health care are given as much consideration as other aspects of planning and delivering care.

Lessons to be Learned: Health Care Organizations and the Community Can Benefit from Improved Environmental Performance

Social Indicators of Health

Infant Mortality * Health Insurance for the Elderly * Children in Poverty * Drug Abuse * Teen Suicide * High School Dropouts * Homicides * Food Stamp Coverage * Housing * Average Weekly Earnings * Unemployment * Health Insurance Coverage * The Elderly in Poverty * Child Abuse * Highway Deaths Due to Alcoholism * The Gap Between the Rich and the Poor

Social Index of Health and GDP



The Fordham Institute for Innovation and Social Policy report on the Social Index of Health teaches us an important lesson: to broaden our focus to indicators beyond financial indexes. The social index of health is an aggregate number that represents data on 15 indicators of the "social health" of our society. Indicators include such things as traffic fatalities due to alcohol, teenage pregnancy, elderly in poverty, homicides, abuse, and other factors that often bring people to hospital emergency departments. The study shows us that while our Gross Domestic Product (GDP), increased by 90% from 1975-1995, our Social Index of Health declined by 45% over the same time period. If we limit our focus solely to economic indicators, out community appears to be thriving. If we broaden our focus, and consider social indicators, a less glowing situation is revealed. As our economic indicators soar, our social indicators decline. The social index of health tells another story about the status of our communities.

This study offers a parallel lesson for the "bottom line" of our hospitals. If we merely focus on the economic health of our organizations, we are likely to overlook the social index of health of our communities and the environmental health index of our communities. The environmental health index of the community includes the quality of air, water and soils. Health care organizations impact environmental quality in communities on a number of levels. The adverse nature of this impact can be greatly reduced by ensuring that organization's environmental performance issues become part of the discussion at the board level. As a Trustee, you have a responsibility to ensure that your organization has environmental policies and practices in place to support a healthy community.

Monitoring environmental performance indicators is commonplace in other industries outside health care. These industries have reaped multiple benefits by transforming operations in environmentally responsible ways.

Issues to Discuss at the Board Level

- How much energy does our organization use per year, where does it come from, what criteria are involved in choosing the energy source? Are energy conservation measures in place?
- How much water does our organization use each year? Are water conservation measures in place?
- How much waste do we generate per year? Where does it go? Are waste reduction programs in place?
- What happens to confidential paper? Where does it go? How many tons per year do we generate? Do we have a hard copy document disposal policy to ensure proper handling and destruction of materials?
- How much waste do we recycle?
- How much biohazard waste is generated? What happens to it? Where does it go? Have we minimized incineration?
- How much hazardous waste do we generate per year? What happens to it? Are waste minimization programs in place?
- What happens to our green wastes? How much waste is composted?
- Are batteries collected for recycling?
- Has our organization acknowledged the AHA/EPA Memorandum of Understanding? What is our plan for achieving the goals?
- What transportation policies do we have in place? Do we encourage car pooling, public transportation, alternative transportation?
- What requirements do we place on our vendors upstream and downstream to be environmentally responsible?
- Who is in charge of environmental management?
- Do we have a toxics use reduction policy?
- Is there a plan for resource conservation?

The Nightingale Institute for Health and the Environment (NIHE), founded in 1998, is a nonprofit 501(c)3 organization. Our mission is to assist health care professionals to understand the inextricable link between human and environmental health. NIHE assists health care professionals to understand their role in creating the changes in practice needed to improve the health of humans and the environment.

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More Information

If you would like a presentation on environmental issues in health care for your board, please contact us at the Nightingale Institute for Health and the Environment at 802-846-1680. We offer presentations, workshops and other information sharing programs to help foster environmentally responsible health care.

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Resources

American Hospital Association

www.aha.org

Trade organization representing America's hospitals. Has entered into a voluntary agreement with the United States EPA to reduce pollution from health care. To obtain a copy of the agreement, visit the web site at www.aha.org/MemOfUnder.html

American Nurses Association

www.ana.org

America's largest professional nursing organization representing America's 2.6 million registered nurses. ANA has developed a Nurses Pollution Prevention Kit, a resource which provides nurses with the tools to help health care organizations reduce pollution. To order, call 800-637-0323 and ask for item 9811LA.

Children's Environmental Health Network

www.cehn.org

Nonprofit organization with lots of useful information on how various environmental factors and pollutants disproportionately impact the health of children. A great web site to visit to learn more about the links between human and environmental health, and in particular, to learn about children's greater susceptibilities to small amounts of environmental pollution.

Health Care Without Harm

www.noharm.org

A coalition of nearly 200 organizations working collaboratively to transform the health care industry so that it is no longer a source of environmental harm. Web site has lots of useful information and links to helpful sources.

Nightingale Institute for Health and the Environment

www.nihe.org

A non-profit organization focused on educating health care professionals on the environmental impact of health care, and opportunities to enhance environmental performance. Web site has lots of other links to organizations and resources which provide additional assistance and support.

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