



# Green Initiatives

## What's Good for the Planet is Good for the Patient, the Staff, the Community — *and* the Bottom Line

By NANCY MULVIHILL, M.A.

**A**sk hospital leaders to name the top challenges to their organizations' economic viability, and you're sure to hear about skyrocketing costs, shrinking reimbursements, sluggish admissions, the burgeoning uninsured and an aging population that consumes a disproportionate share of resources. Keeping pace with health information technology, adapting to new outcomes-based care models and managing pressures to merge and acquire also make it high on the lists.

Interestingly, however, one issue that should be keeping CEOs awake at night is seldom mentioned — and that's climate change and health care's role in it. The Environmental Protection Agency (EPA), along with other federal agencies, support evidence that shows climate change poses a threat to human health and welfare via temperature effects, e.g., severe heat waves, extreme weather events and an increase in climate-sensitive diseases.

Why don't we take the threat of climate change seriously?

We in health care aren't the only ones. The United States as a country is less exercised about climate change than are many others. In fact, you can turn on the television here and catch a debate between mainstream figures about whether climate change is even real. However, according to the Rasmussen pollsters' 2011 Energy Update, the majority of Americans (58 percent) think climate change is a serious problem and fully one-third (33 percent) "see it as a very serious problem."

A survey of several thousand leading scientists conducted in 2008 by the University of Illinois at Chicago found that 82 percent believe human activity has been a significant factor in changing mean global temperatures. Climatologists who are active in research showed the strongest consensus on the causes of global warming, with 97 percent agreeing humans play a role.

A 2009 collaborative study between *The Lancet* and the University College London reported that "climate change is the biggest global health threat of the 21st century." They warn that "the effects on health of climate change will be felt by most populations in the next decades and put the lives and well-being of billions of people at increased risk."

This report outlines the major threats — both direct and indirect — to global health from climate change through changing patterns of disease, water and food insecurity, vulnerable shelter and human settlements, extreme climatic events and population migration. Although vector-borne







diseases will expand the reach and the death tolls, the indirect effects of climate change on water, food security and extreme climatic events are likely to have the biggest effect on global health.

They write that “a new advocacy and public health movement is needed urgently to bring together governments, international agencies, non-governmental organizations, communities, and academics from all disciplines to adapt to the effects of climate change on health.”

### HEALTH CARE'S FOOTPRINT

The fact is that hospitals generate a huge environmental footprint, adding greatly to climate change. Few sectors of the economy consume as many resources — electricity, water, cleaning products, chemicals and food — as health care. The U.S. Department of Energy reports that hospitals account for more than 8 percent of the United States' annual energy consumption. In terms of dollars, that equates to spending \$8.8 billion on energy each year, second only to the service industry in intensity of energy use.

Other environmental areas in which the hospital industry holds dubious distinction:

- Hospitals are consistently among the top 10 water users in their communities — at a time when the EPA reports at least 36 states are anticipating local, regional or statewide water shortages by 2013 (even under non-drought conditions). The cost of water is rising; over the past five years, U.S. municipal water rates have increased by an average of 27 percent.

- Health care facilities use an array of toxic chemicals — from cleaning materials to chemotherapy drugs — and generate thousands of tons of solid and medical waste each year.

- Hospitals are significant sources of pollution in communities because of the waste generated through modern health care delivery. The Center for American Progress, a progressive think tank in Washington, D.C., states the health care industry's ecological impacts are massive. U.S. hospitals generate approximately 6,600 tons of waste daily (25 pounds of waste per day per patient), 85 percent of which is nonhazardous solid waste such as paper, cardboard, food, glass and plastics that can be recovered or recycled. This recyclable waste could easily be sorted from the industry's hazardous, infectious and radioactive waste, lowering disposal costs.

This waste represents an environmental footprint much larger than just the cost and impact of disposing of the materials: For every pound of product manufactured in the United States, 32 pounds of waste are created during the manufacturing process, and transportation also adds to the environmental impact of products a hospital purchases.

Waste management initiatives offer tremendous opportunities for a facility to reduce both its environmental footprint and its supply chain and waste disposal expenses. Estimates of cost savings can be as high as 40 percent to 70 percent of waste disposal outlays, representing \$4 billion to \$7 billion in savings for the industry as a whole.

**Energy Star reports that every \$1 a nonprofit health care organization saves on energy is equivalent to generating \$20 in new revenues for hospitals or \$10 for medical offices.**

In the May 2012 edition of *OR Manager*, an article reported that many hospitals have demonstrated bottom-line benefits from greening their operating rooms. Laura Wenger, RN, who wrote the piece, is executive director of Practice Greenhealth, a nonprofit membership organization based in Reston, Va. ([www.greeningtheor.org](http://www.greeningtheor.org)).

- MetroWest Medical Center in Framingham, Mass., saved an estimated \$29,843 and reduced its waste stream by 5,606 lbs. of disposable blue wrap in 2010 by transitioning 66 percent of its surgical instrumentation to reusable rigid sterilization containers.

- Good Samaritan Hospital, a 377-bed Bon Secours Charity System hospital in Suffern, N.Y., installed a fluid management system in the operating room, avoiding the creation of 261,999 pounds of waste and saving \$86,460 in 2010.

Recycling initiatives are another key component of effective waste management. One example: Dominican Hospital (part of Dignity Health) in Santa Cruz, Calif., donates its sorted blue sterilization wrap to a local nonprofit recycling organization. The recycling group sells recyclables and uses the proceeds to buy and prepare hot meals for disadvantaged senior citizens. A recovery company in nearby Oakland, Calif., purchases the material, which is re-used as a binding agent in



making siding materials.

Another source of pollution attributable to U.S. hospitals and long-term care facilities is that annually we flush millions of pounds of pharmaceuticals down the drain, “pumping contaminants into America’s drinking water,” according to an ongoing Associated Press (AP) investigation. The discarded medications are expired, spoiled, left over, unneeded or simply dispensed but never taken or used.

Few of the country’s 5,700 hospitals and 45,000 long-term care homes keep data on the pharmaceutical waste they generate. Based on a small sample, though, the AP was able to project an annual national estimate of at least 250 million pounds of pharmaceuticals and contaminated packaging, with no way to separate out the drug volume.

One thing is clear: The massive amount of pharmaceuticals being flushed by the health services industry is aggravating an emerging problem documented by the investigative stories — the commonplace presence of minute concentrations of pharmaceuticals in the nation’s drinking water supplies, according to the series, affect at least 46 million Americans.

Researchers are finding evidence that even extremely diluted concentrations of pharmaceutical residues harm fish, frogs and other aquatic species in the wild. Also, researchers report that human cells fail to grow normally in the laboratory when exposed to trace concentrations of certain drugs.

In the course of a five-month inquiry, the AP discovered that drugs have been detected in the drinking water supplies of 24 major metropolitan areas from Southern California to Northern New Jersey, from Detroit to Louisville.

#### ADDITIONAL GREENING INITIATIVES

There are tremendous opportunities, including some remarkably simple and easy-to-implement strategies, for health care facilities to effectively reduce their environmental footprint.

The EPA’s Energy Star program reports that every dollar a nonprofit health care organization saves on energy is equivalent to generating \$20 in new revenues for hospitals or \$10 for medical offices.

Two of Covenant Health Systems’ facilities, Mary Immaculate Health Care in Lawrence, Mass., and Youville Place Assisted Living Resi-

dence in Lexington, Mass., recently reported that together they saved over \$320,000 in combined energy, water and waste costs over the past two years. They installed energy efficient systems, such as cogeneration, and installed energy efficient lighting. After conducting a water audit and installing low-flow shower heads, Youville Place Assisted Living Residence reduced water usage from 2.4 gallons to 1.5 gallons per minute — a simple measure that is saving 498,000 gallons of water and more than \$5,000 annually.

The EPA estimates that 30 percent of the health sector’s energy use could be reduced by switching toward renewable and more efficient energy sources. Energy Star offers free energy audits for health care facilities as well as energy evaluation tools and information on how to purchase more energy-efficient products. And, it provides information on making facilities more efficient through simple steps like switching off machines when not in use, calibrating thermostats and periodically checking the hot water system for leaks. ([www.energystar.gov](http://www.energystar.gov)). These types of interventions work, regardless of an organization’s size.

Sustainable building is another important strategy. An estimated 100 million square feet of medical building space is constructed annually, and built-in energy and design efficiencies can help achieve significant savings over time. In fact, a cost-benefit analysis on green buildings in California determined that a minimal upfront investment of about two percent of construction costs typically yields life cycle savings of over ten times the initial investment. Moreover, with a growing number of funding sources requiring green building as a baseline, being green can also improve a

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facility’s ability to attract funding opportunities.

The *Green Guide for Health Care*, a project of the nonprofit organizations Health Care Without Harm and Center for Maximum Potential Building Systems, is a best-practices guide for healthy and sustainable building design, construction and operations for the health care industry. It is the first quantifiable sustainable design toolkit inte-

grating enhanced environmental health principles and practices into the planning, design, construction, operations and maintenance of health care facilities. The guide is available at [www.gghc.org](http://www.gghc.org).

Another important area in which to implement environmental change is in green cleaning. The EPA notes that thousands of chemicals and biological pollutants are found indoors which can lead to numerous health problems including kidney and central nervous system damage. Using green cleaning products demonstrates not only respect for the environment but also respect for the workers who are exposed to them.

Concentrated formulations, precise dispensing systems, group purchasing discounts and value-added product training offered by savvy suppliers and distributors help to contain and control costs — dispelling the misperception that green products always cost more.

#### **GREEN INITIATIVES INTEGRAL TO MISSION**

While there are clear economic imperatives for hospitals to adopt sustainable practices, it's not all about the bottom line. As Catholic hospitals we are compelled to be good stewards of the earth because it is part of our mission to care for the sick and vulnerable, the unborn and all of creation, according to church teachings. As health care professionals, we are compelled to "First, do no harm." And as neighbors both locally and globally, we are called upon to act in the best interest of our communities.

"As a wealthy nation and as the top contributor to greenhouse gases, we in the United States must help to shape responses that serve not only our own interests but those of the entire human family," affirmed the U.S. Conference of Catholic Bishops (USCCB) in 2001 in a statement entitled "Global Climate Change: A Plea for Dialogue, Prudence, and the Common Good."

Today, roughly a quarter of all human disease and deaths in the world can be attributed to what the World Health Organization (WHO) broadly defines as environmental factors. In February 2012, WHO stated that "worldwide, as many as 13 million deaths could be prevented every year by making our environments healthier." This statistic alone is a powerful call to action.

Notably, the world's poor are disproportionately affected by environmental issues. "Poor people contribute least to the causes, but will suffer most from the effects of climate change," noted

the USCCB. Pope Benedict XVI has stated, "Environmental degradation makes the life of the poor especially unbearable."

"Climate Change 2007: Impacts, Adaptation and Vulnerability," a report from the United Nations Intergovernmental Panel on Climate Change, took six years to compile and draws on the research of 2,500 scientists from more than 130 countries. The report makes it clear that "while poor people worldwide will suffer most from the effects of global warming, no person on earth will escape its consequences. The effects of global warming will be felt in every region and at all levels of society."

Our path is unequivocal. Pope Benedict XVI has said, "Before it is too late, it is necessary to make courageous decisions to curb climate change." And as the authors of the *Sustainability Roadmap for Hospitals* write on their website, "Today's health care leaders are approaching sustainability with many different priorities, opinions, and perspectives. Every hospital has a different mix of drivers and motivators for taking on sustainability as a goal. For some, being in compliance in a high-risk regulatory environment is a driver. Others are responding to external pressure to address environmental issues like climate change or resource conservation. Some simply want to be better environmental stewards. Most are looking for cost savings. Whatever your motivations, we can all probably agree that using less energy and less water and generating less waste can both save money and contribute to cleaner air and water and a healthier environment."

Amen.

**NANCY MULVIHILL** is vice president, corporate communications, at Covenant Health Systems, Tewksbury, Mass. She has served as head of Covenant Health Systems' environmental committee since 2004. In that time, Covenant has been recognized as a national leader in environmental issues.

#### **RESOURCES**

**American Hospital Association, "Sustainability Roadmap for Hospitals: A Guide to Achieving Your Sustainability Goals"**

Designed to help health care organizations map their journey on the road to sustainability. It is organized from general information to specific measures for improving a facility's performance. [www.sustainabilityroadmap.org](http://www.sustainabilityroadmap.org)

### Catholic Health Association of the United States

The Catholic health ministry has formed a partnership with sponsors, systems, facilities and experts in environmental responsibility to reduce the environmental burden. Resources are available at [www.chausa.org/Environmental\\_Responsibility](http://www.chausa.org/Environmental_Responsibility)

### The Green Guide for Health Care

A best-practices guide for healthy and sustainable building design, construction and operations for the health care industry. [www.gghc.org](http://www.gghc.org)

### Health Care without Harm

An international coalition of hospitals and health care systems, medical professionals, community groups, health-affected constituencies, labor unions, environmental and environmental health organizations and religious groups working to implement ecologically sound and healthy alternatives to health care practices. [www.noharm.org](http://www.noharm.org)

### Practice Greenhealth

An industry association whose mission is to collaborate and provide education, tools and information about the best environmental practices to help health care organizations supercharge their operational efficiency, increase regulatory compliance and improve the health of their communities. [www.practice-greenhealth.org](http://www.practice-greenhealth.org)

### U.S. Environmental Protection Agency

EPA is the federal government agency charged with protecting human health and the environment by writing and enforcing regulations based on laws passed by Congress. [www.epa.gov](http://www.epa.gov)



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