

Greening HealthCare

by Mike Sawchuk

The Business Ledger, a newspaper serving suburban Chicago, reported earlier this year that some of the area's leading hospitals are now making significant strides toward "Greening" their facilities and building operations and becoming more environmentally responsible.* Interestingly, it appears these facilities are finding it is not only good for the environment but good for their bottom line as well.

This was certainly not the case a decade or more ago. In the late 1990s, it was estimated that to build and operate a Green facility would cost an additional 20 percent or more annually, when compared to a conventional facility. Today it is estimated that any additional costs to build and operate Green are closer to 2 to 5 percent.

Specifically, according to the *Ledger* report, as these hospitals adopt more environmentally preferable practices, they are finding that their energy costs, a major expenditure for most health-care facilities, is actually coming down.

According to Robin Guenther with the New York architectural firm Perkins + Will, health care is the second most intensive

sector for energy use in the United States, exceeded only by the food service industry.

This power reduction has been accomplished in many ways. Interestingly, one key energy-related reason for this savings is that many medical facilities find they no longer must purchase costly pollution-reducing equipment.

Although significant improvements were noted and applauded, the report also indicated that some Chicago-area hospitals could still be doing better. Specifically, they could make improvements in the areas of energy consumption, consumable medical supplies, waste reduction, and hospital design and construction, as well as maintenance operations of patient care buildings.

Although this study focused on just one area of the country, we see more and more medical facilities throughout North America going Green. And one of their big concerns—and why they want to adopt more Green practices—is to take steps to reduce emissions of volatile organic compounds (VOCs).

VOCs

According to the U.S. Environmental Protection Agency (EPA), VOCs are gases that include a variety of chemicals and have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher (up to ten times higher) indoors than outdoors. And in a health-care setting—where there are more often people with weakened immune systems, pregnant women, older people, and infants—VOCs can have a more harmful impact on health than they do in other settings.

VOCs can be released from furniture, carpeting, office equipment such as printers and copiers, and many conventional cleaning chemicals. Because of this, medical facility administrators should take a “big-picture” approach when it comes to reducing VOCs and their sources. They must look at a variety of materials and products that could be releasing VOCs.

Though somewhat daunting, this challenge is very doable. For instance, the *Ledger* report indicated that Marianjoy Rehabilitation Hospital, located in Wheaton, Illinois, was able to reduce VOC emissions in their new outpatient pavilion by more than 1,100 pounds just by installing low-VOC carpets. Another 30 pounds of VOCs were eliminated by selecting

electronic equipment certified by the Energy Star program, a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy that certifies energy-efficient products and practices to help consumers cut costs while protecting the environment.

Additionally, one of the most significant and, as it turns out, easiest ways the hospital was able to reduce VOC emissions was to transfer from conventional to Green cleaning products. The report found that the hospital was able to reduce VOC emissions by a staggering 22,000 pounds over a nine-month period just by using Green-certified and low-VOC cleaning products.

This is noteworthy because often medical and other facilities are simply unaware of the impact conventional cleaning chemicals can have on the indoor environment. But medical facilities use huge volumes of cleaning chemicals, and their impact can be even more significant here than in other types of facilities.

In fact, a report by the Massachusetts Department of Public Health on energy-efficient products and practices found that nurses have the highest number of work-related cases of asthma and that health care is the industry with the most

cases of work-related asthma. The report blamed this on poor indoor air quality, often the result of the products used to clean the facility.**

How to Tell if It's Green

Selecting Green cleaning chemicals for a medical facility can be more complicated than in most other types of settings. For instance, in a school or office building, facility managers just need to see if the product has been certified by a respected organization such as EcoLogo^M or GreenSeal[®] to determine whether the product is environmentally preferable.

Although this is true for nearly all cleaning chemicals, it is not true for disinfectants. The EPA does not recognize Green certification when it comes to disinfectants, which are used extensively in medical locations. This means that even if a disinfectant has been certified, the certification organization's logo or marking may not be placed on the product and may not be used in any marketing materials if sold in the United States.

Instead, hospitals must select disinfectants that are registered with the EPA based on the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). This registration,

the EPA says, is considered sufficient assurance that a disinfectant is safe and effective.

For those medical buildings attempting to incorporate Green cleaning into their facilities, this has presented a slight road block. Some experts believe that new technologies are now available that make it possible for disinfectants to be as effective, meet all the regulatory concerns of the EPA, and still be Green certified. Although these issues are being discussed with the EPA, at this time the regulations are still in effect and must be adhered to by U.S. medical centers.

However, health-care facilities are heavy users of many products other than disinfectants, such as floor-care chemicals, finishes, glass cleaners, all-purpose cleaners, and many others. And these products can and are being selected based on Green certification and have been shown to help reduce VOC emissions as well as improve the overall health of the facility. What is important is to not delay the transfer to Green-certified cleaning chemicals while deciding what to do about disinfectants.

Other Green Measures

Reducing VOC emissions is just one way medical facilities are Greening their facilities. There are actually scores more.

For instance, many hospitals are taking steps to become free of mercury, which is found in lighting systems, thermometers, and health-care equipment and devices. Several organizations including the EPA, the American Hospital Association (AHA), Health Care Without Harm, Hospitals for a Healthy Environment, and the American Nurses Association are working to virtually eliminate mercury use and waste from hospitals. They also want to reduce overall waste generated from hospitals, which may end up in landfills or incinerated, potentially harming outdoor air quality.

In addition to more energy-efficient “smart lighting” (so that lights go off when a room is not occupied), HVAC, and other systems and mechanicals that have reduced power needs, water-conservation strategies are also playing a greater role, especially in the western states.

For instance, a Kaiser Permanente Hospital office and clinic location in California removed conventional urinal systems and replaced them with waterless urinals. The hospital calculated that by removing the conventional urinals, which use on average 3 gallons of water per flush, and replacing them with waterless systems, it could achieve a savings of

55 gallons of water per urinal per day, totaling more than 280,000 gallons of water annually.

We are even seeing medical facilities incorporate the Green concept of shopping locally. By selecting regionally available materials and food products, for instance, less fuel is required to transport them, reducing damaging greenhouse emissions.

Forming “The Green Team”

Once a facility decides to go Green, the first issue to be addressed is, how? Where should we start?

The first step is to establish a Green Team. And the Green Team’s first task is to establish a benchmark: determine and evaluate what services and products—whether it’s construction materials, carpets, or cleaning chemicals—are being used in the facility now and which can be replaced with environmentally preferable substitutes.

Often it is best to start with the so-called low-hanging fruit, those items such as cleaning chemicals that are easiest to replace with Green equivalents. This helps the team move

up the ladder to those items that may take more time or be a bit more complicated.

It also helps both the team and the facility administrators to realize that Green is a journey, not a destination. There are reports that Stanford University in Palo Alto, California, first started looking into more environmental responsible building and operating practices nearly 25 years ago, far ahead of many other colleges and universities. Today, they continue to look for ways to protect the health of building occupants and the environment—and they keep on discovering them.

* Published January 7, 2008.

** Massachusetts Department of Public Health, *Sensor Occupational Lung Disease Bulletin*, November 2000.

Mike Sawchuk is Vice President and General Manager of Enviro-Solutions, a leading manufacturer of Green cleaning chemicals and products.