

More than four years ago, two New York hospitals—Jacobi Medical Center and North Central Bronx Hospital—announced they were beginning a “Greening the Cleaning” program. The program involved replacing conventional cleansers that include chemicals and ingredients such as am-

green cleaning products did not perform as well as conventional products. Health care-associated infections, which have been on the rise in many medical facilities, as well as global infections, which were not encountered just a few years ago, have amplified these concerns. Many hospital administrators simply have not wanted to take a chance on en-

ed. Fortunately, this is less true today. That’s because we now have accepted environmental standards and criteria to test and evaluate products and hundreds of products have been certified to meet those standards.

Further, some reputable health care organizations and associations have encouraged their members to use prudence when selecting green cleaning products or implementing a green cleaning program in their facilities. A lot of this was based on the confusion regarding what is green and what constitutes a green cleaning program. Some of it was because many of these organizations did not believe enough studies and data were available to make the case for green. But time and the widespread use of environmentally preferable cleaning products in other industry segments have helped address these concerns.

‘GREENING’ THE CLEANING’

Implementing an environmentally
friendly cleaning program



by Stephen P. Ashkin

monia and chlorine with products made from biodegradable ingredients considered less harmful, such as soy, cornstarch and citric acid. Although it made headlines at the time, especially because these were the first two hospitals in the city to begin selecting green cleaning products, it is doubtful it would make the news today.

Now, health care is one of the faster-growing industry segments to incorporate green cleaning and other more environmentally responsible operating procedures. However, this has not always been the case and the transformation, when compared with other industry segments, has actually been relatively slow.

One of the reasons the greening process has moved more slowly in health care is because of concerns that many

environmentally preferable products because they believed the potential risk if the products did not work as well as conventional cleaners would be too great.

Additionally, both state and federal government regulations have mandated that only certain types of cleaning products be used in specific areas of the hospital. For example, surgery areas may require the use of very powerful disinfectants. But this caused problems because very often, hospital environmental services staff would use these same products in other sections of the hospital where such potent chemicals were simply not needed.

Another reason green cleaning was delayed in health care was because a great deal of confusion existed about what green cleaning is, and how products used during the process are select-

Definitions and clarifications

One way green cleaning can be defined is “cleaning to protect health without harming the environment.” Viewed more broadly, green cleaning seeks to reduce the overall environmental and health impacts of cleaning. It involves selecting, using and disposing everything from cleaning chemicals and equipment to paper products, trash liners, microfiber and chemical auto-dilution systems. It is also about sustainability. One of the key goals of green cleaning is to leave future generations with an environment at least as good as the one that was inherited.

The concern about many of the products currently used in medical facilities is they include ingredients known to be harmful to human health and the environment. Several cleaners commonly used in hospital cleaning can cause a variety of respiratory problems, eye, nose and throat irritation, headaches and nausea. The severity of these conditions and their long-term impacts on health are not

totally understood; however, it is known that they increase with the amount and extent of exposure.

Antimicrobial products

For example, antimicrobials are used in health facilities because they are designed to kill bacteria and germs. Although they serve the industry well, they can negatively impact human health and the environment. In fact, the Environmental Protection Agency classifies microbials as pesticides. They include the following:

Quaternary ammonium compounds. "Quats," such as benzalkonium chloride, are effective as sanitizers or disinfectants on a wide range of bacteria and some viruses. Sometimes they are combined with alcohols, which can be corrosive to some metals and surfaces. There are also concerns that quats in high concentrations can trigger asthma.

Phenols. These are able to kill more

organisms than quats, but have very high environmental and health consequences. They can also destroy plastic, paint and rubber surfaces.

Aldehydes. These are often used as a form of disinfectants. These are extremely harmful to human health and the environment, and can cause headaches, nausea, vomiting, and skin, eye and respiratory problems. Hospital staff using aldehydes, as well as all antimicrobials, should always wear protective clothing.

Oxidizers. Oxidizers such as hydrogen peroxide are used as disinfecting ingredients in medical facilities. If properly diluted, they are considered to have less negative impacts on health and the environment than many other cleaners and disinfectants.

Chlorine bleach. Bleach is a very

powerful disinfectant but is known to be corrosive to eyes and skin. It is also a respiratory irritant that can produce a poisonous gas when mixed with other commonly used cleaning products. Bleach must be properly diluted and replaced frequently because the solution is unstable.

Alcohol. This can also be used as a disinfectant but can also be a respiratory irritant. Neither alcohol nor bleach should be used for cleaning. If these products are used, surfaces must be cleaned first and then disinfected with the bleach and/or alcohol.

Zones of usage

Many cleaning chemicals and ingredients are mandated by law or required by accreditation organizations in some health care facilities. However, they are often

used in hospital areas where they are not necessary.

As a result, one of the first ways an environmental services manager can “green” a health care facility and still abide by laws and regulations is to use chemicals only where they are needed. This can best be determined by dividing a health care facility into three sections and using antimicrobials only in parts of the hospital where they are required or necessary.

These three sections of a hospital include the following:

Critical care zones. These include areas and items that come in contact with broken skin. Usually the types of cleaning chemicals used in these areas are mandated by law. They include operating rooms, labor and delivery rooms, and the morgue.

Semicritical care zones. These areas require a high level of disinfection and include such areas as the nursery, clinics,

restrooms and physical therapy rooms. Hospital administrators may have more flexibility over which cleaning products and chemicals are used in these areas.

Noncritical care zones. These areas just require soap and water and a low level of disinfection. They include administration, accounting, mail rooms, shops and waiting areas. Administrators may make their own cleaning chemical and product selections for these areas.

termining in which hospital areas a green cleaning program can be implemented, the first question should be "How do we get the program working?"

According to Hospitals for a Healthy Environment (which recently became part of Practice Greenhealth), there are specific steps in the green process and, fortunately, they are designed so they can be put into practice by busy staff working in hectic health care facilities. These steps include the following:

Form a team. This may include personnel from a hospital's environmental services department, infection control, nursing, employee health, administrative staff and public affairs. The team will be responsible for reviewing the technical aspect of cleaning products and systems, decision-making, some training and coordinating the green cleaning process.

Benchmark. To convert to green cleaning, the team must determine where the hospital is now so they might identify needs and opportunities. This requires evaluating and inventorying all of the products currently used for cleaning, determining which can be replaced with green alternatives and identifying products that have been linked to worker injuries or staff and patient complaints. This benchmarking process must include all cleaning supplies and equipment such as chemicals, paper products, vacuum cleaners, floor machines and carpet care equipment.

Determine green criteria. It is essential to have some type of criteria or standard on which to base green cleaning product buying selections. In some cases, chemicals can be chosen only if they have been certified by leading green certification organizations. In other cases, the green standards adopted by the manufacturer are honored. Vacuum cleaners and extractors may need to earn approval by the Carpet and Rug Institute.

Product testing and selection. Just because products are green does not necessarily mean they all perform at the same level. Once specific green products have been selected, they must be tested in a health care facility to determine if they perform as well as the conventional products they are replacing.

In most cases, this will not be difficult; however, there may be exceptions. For instance, one health care facility tried 25

different green floor care products before eventually finding two that proved to be acceptable.

Execute the program. Change is not always easy and some cleaning professionals will resist losing cleaning tools and products that have performed dependably for years. However, effective education, training and communication telling employees why environmentally preferable products are being implemented usually helps make the change and adjustment easier.

A green cleaning program is also an opportunity to train staff on more efficient cleaning techniques. Building occupants often will say the appearance of their facilities has improved with green cleaning. It is not necessarily the cleaning products, but the training that was included in the conversion that resulted in the facility's improved appearance.

Finally, green cleaning is best implemented when it is supplemented with a continuing education program. Hospital administrators, cleaning supervisors and workers should take advantage of green cleaning seminars and programs. Not only will they learn new techniques, but these programs can reinforce the reasons a green cleaning program has been implemented. In turn, this may elevate the respect cleaning workers have for their profession as well as the contributions they make to public health.

Administrative support

How long it takes to convert from conventional cleaning to green cleaning depends on factors such as the size and use of the facility, the number of environmental services personnel involved and other dynamics.

However, hospital administrators' desire to make their facilities green is key to the process. If there is a strong desire for green cleaning from above, this will be transferred to all involved and the process will usually move along rapidly and smoothly. ■

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Patient rooms may possibly fall into any of these three care categories. Hospital administrators, clinical and operations staff and infection control professionals should decide what products should be used based on the vulnerability of the patient and uses of the room.

Steps to take

With many more health care facilities now seeking to make their buildings healthier, more sustainable and environmentally responsible, the implementation of green cleaning is becoming much more common. However, aside from de-

TAKING GREENING BEYOND CLEANING

Cleaning is just one way health care facilities can become greener. For instance, the University of Washington Medical Center in Seattle has been incorporating green practices for a number of years.

Some of its accomplishments include the following:

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- It has doubled the amount of recycling in the facility from 324 tons to more than 660 tons over the past four years. This avoided landfill costs of \$78,718 and allowed them to receive a rebate of \$38,261 for paper and cardboard recycling.

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- Solid waste disposal decreased from 1,616 tons in 2002 to 1,514 tons in 2006.

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- Surgical instruments are now sterilized with a less environmentally hazardous chemical and a new generation of sterilizers, reducing ethylene oxide usage from 643 pounds to 415 pounds in about two years.

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- A laundry reuse program has resulted in a savings of 12 million gallons of water, reducing water costs by \$140,000 over a 24-month period.

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More information on green health care facilities can be found on Practice Greenhealth's Web site at www.practicegreenhealth.org.