



giveness to nurses with advanced degrees who teach, Lancaster said.

Nursing organizations such as the AACN are calling for more federal support for nursing education. Currently, Medicare provides some funding for physician residencies, but no such comparable support is available for nursing schools.

Dracup suggests that the government resurrect a nurse traineeship program it operated in the 1970s. The program was designed to encourage clinical

nurses to go back to school for their PhDs and teach. Unlike existing federal grant and loan programs, the program paid the nurses' way through school and did not require them to take out loans. Dracup herself and many of her contemporaries on nursing school faculties went through the program.

Dracup also believes that individual philanthropy could also help ease the burden on nursing schools. She explained that traditionally, individuals

and physicians have donated generously to medical schools, but nursing schools have been left out.

"I'm hoping the American public, which is so generous, as it thinks about the nursing shortage and the kinds of work that nurse-scientists and nurse-clinicians do, will begin to think about having endowed chairs in nursing to support the science, and providing philanthropy for clinics managed by nursing schools," she said. □

Hospitals and Clinics Go Green for Health of Patients and Environment

Tracy Hampton, PhD

THE HEALTH OF THE ENVIRONMENT is currently on many people's minds, as scientists study it, politicians argue about it, and others try to do their part by adopting environmentally friendly practices at home and in the workplace. Some of the latter include individuals charged with making businesses and organizations—like hospitals—run.

Health care administrators say that clinics are an obvious place to implement "green" initiatives, from reducing the quantity and toxicity of health care waste to integrating sustainable design and building techniques. "We should be doing everything we can to make sure that the environment in health care facilities and the impact they have on surrounding communities are healthy," said Anna Gilmore Hall, RN, executive director of Health Care Without Harm, an international coalition of more than 500 hospitals, medical professionals, labor unions, environmental organizations, community groups, and other organizations that are working to reduce pollution in the health care industry.

RAISING AWARENESS

A variety of organizations and coalitions are coming on the scene to help the growing number of hospitals and clinics that

are adopting ways to become more efficient and less detrimental to the environment. Significant outreach efforts are being made by Hospitals for a Healthy Environment, which was jointly founded by the American Hospital Association, the US Environmental Protection Agency, Health Care Without Harm, and the American Nurses Association. The not-for-profit organization is educating health care workers about pollution prevention opportunities and providing useful tools and resources to facilitate the industry's movement toward environmental sustainability. Its resources include a peer-to-peer listserv that allows health care professionals to ask technical questions and receive advice and feedback; monthly teleconferences; and model pollution prevention

plans for medical waste minimization, mercury elimination, and reducing other pollutants.

According to Hospitals for a Healthy Environment, most hospitals are not aware of the amounts of waste they generate or how much they spend annually on disposal, not to mention its environmental impact. But there are practical solutions to many of these issues. For example, when staff throw away noncontaminated waste into regulated medical waste bins, facilities are needlessly paying for specialized disinfection and disposal. Institutions that have reduced the volume of regulated waste save 40% to 70% on waste disposal, according to Hospitals for a Healthy Environment.



A variety of clinics and hospitals are adopting ways to become more efficient and less detrimental to the environment.



"It's well known that in hospitals, there's no time, no space, no money, so we're here to help implement programs in really cost-effective and efficient ways," said Laura Brannen, ED, Hospitals for a Healthy Environment's executive director. She added that hospitals that adopt these programs have found that their efforts can save a significant amount of money. "If you're not watching the back door and the trash dock, you're tossing resources," she said. Those resources include medical supplies—many unopened and unused materials are thrown out simply because they were in a room with a patient.

A growing number of hospitals may call on Brannen and her staff for advice as federal and state governments continue to reshape regulations related to health care facilities. Since 1995, 95% of the medical waste incinerators in the United States have been closed because they could not meet environmental standards. In addition, hospitals are experiencing compliance problems across all environmental statutes, with the majority of violations involving hazardous waste management.

GREEN EFFORTS

At its Environmental Excellence Summit held earlier this spring, Hospitals for a Healthy Environment honored 128 hospitals, health care facilities, and other organizations. It also inaugurated an Environmental Leadership Circle to recognize groups that have won awards repeatedly over the years, commit to an exceptional standard of green efforts, and share their knowledge with other facilities.

One such leader is the University of Michigan Hospitals and Health Centers, in Ann Arbor. In 2006, its facilities recycled more than 1350 kg of compression sleeves (an effort that saved more than \$236 000) and more than 7600 L of formalin, xylene, and alcohol. Other creative waste-reduction efforts included the collection of 40 500 kg of worn and surplus linen for sale to the local automotive industry and a paperless employment system that has saved substantial quantities of paper.

Environmental concerns also are evident in the university's plans for the building of the replacement facility for the C.S. Mott Children's Hospital and Women's Hospital. For the project, scheduled to open in 2011, the university is following the *Green Guide for Health Care*, Health Care Without Harm's and the Center for Maximum Potential Building Systems' design tool kit for integrating environmental and health principles and practices into the planning, design, construction, operations, and maintenance of health care facilities (<http://www.gghc.org/>).

Kaiser Permanente, headquartered in Oakland, Calif, is also following the *Green Guide for Health Care* and has won numerous awards for its environmental efforts. In the past 5 years, the organization has chosen ecologically sustainable materials for 2.7 million square meters in new construction, prevented 70 billion pounds of air pollutants each year, eliminated the purchase and disposal of 40 tons of hazardous chemicals, saved more than \$10 million per year through energy conservation strategies, and installed more than 50 acres of reflective roofing. It also makes a concerted effort to buy food and products locally.

"Some hospitals import marble from Italy and deforest part of Africa for wood, but we try to use local renewable resources in our buildings and we serve organic food grown nearby," said Christine Malcolm, Kaiser Permanente's senior vice president for hospital strategy and national facilities. Malcolm added that Kaiser Permanente's buildings abide by strict green standards and cost 5% less to build than other hospitals in California.

Dartmouth-Hitchcock Medical Center, in Lebanon, NH, is another environmental leader, with a recycling rate consistently exceeding 30%. Xylene and alcohol recycling saves at least \$48 000 per year in avoided hazardous waste disposal fees and avoided chemical purchases. Dartmouth-Hitchcock also has launched a pilot project to switch to intravenous bags that do not contain polyvinyl chloride (PVC) and has begun using biodiesel fuel in its diesel fleet and grounds vehicles. Since 1990, the

medical center has followed a formal environmental program that includes standard recycling programs for common items like paper and plastic, as well as procedures for recycling batteries, fluorescent bulbs, and chemicals. The facility's builders incorporated an environmentally friendly building design, including energy-efficient glass, compact fluorescent lighting, and highly efficient and programmable heating and cooling systems.

For hospitals that wish to get on the environmental bandwagon, small initial steps can have a big impact, said Gail Dahlstrom, Dartmouth-Hitchcock's vice president for facilities management. "Behavioral issues, like making an effort to recycle, are simple things," she said. "Also, look into your housekeeping department and really assess the materials and agents that you use," she advised.

COMMUNITY IMPACT

Hospitals and physicians also have the power to promote change outside the health care realm. Brannen points to hospitals' lead in eliminating mercury as the impetus for getting rid of mercury in all thermometers sold to the public. "This is a perfect example of how the community became educated because we were making changes in health care," she said.

The market also can be affected by decisions made in the clinic. "The hospital sector can really make dramatic social change by leveraging its purchasing power," said Hall, noting that the health care industry represents 15% of the gross national product of the United States. "If we come together and exercise our purchasing power, we can change not only health care but the US economy," said Malcolm. Hall pointed to recent demands by Kaiser Permanente for new carpeting that did not have PVC backing. "As a result of their insistence on that kind of product, you and I can now go to the store and buy carpet for our homes that doesn't have PVC backing," she said.

Physicians also have an important role. "It will be very difficult for environmentalists to move a market without broad physician involvement," said Brannen. She said clinicians can take a



number of steps, from choosing reusable gowns to limiting surplus supplies in operating rooms.

To accelerate efforts, Kaiser Permanente and other health care organizations, architectural and engineering firms, academia, industry, nonprofit groups, and governmental organizations are embarking on a program called Healthcare's Global Health and Safety Initiative. The goals of this effort include establishing open source sharing of best practices that improve patient, workplace, and environmental health and safety; guidelines for group purchasing to transform the market and lead to safer and more environmentally sensitive products at competitive prices; and research to document ben-

Helping Health Care Go Green

- *The Green Guide for Health Care*. This tool kit, developed by Health Care Without Harm and the Center for Maximum Potential Building Systems, gives information on integrating environmental practices into the design, construction, operations, and maintenance of health care facilities (<http://www.gghc.org/>).
- Health Care Without Harm. The mission of this global coalition of organizations and groups is reducing pollution in the health care industry (<http://www.noharm.org>).
- Hospitals for a Healthy Environment. This organization educates health care professionals about pollution prevention and provides resources to help the industry move toward environmentally sound practices (<http://www.h2e-online.org/>).

efits and cost-effectiveness of various interventions.

While environmental experts would like to see even greater involvement from the health care community, they

are encouraged by the various incremental steps that are being made on many fronts. "We really think the health care industry is at a tipping point," said Hall. □

Study Finds Breastfeeding Not Protective Against Development of Allergies, Asthma

Mike Mitka

BREASTFEEDING APPEARS TO PROVIDE many health benefits to newborn infants, but reducing their risk for developing certain allergies or asthma is not one of them, according to findings by researchers from Canada and Belarus.

In a randomized controlled trial with an initial enrollment of 17 046 mother-infant pairs, the researchers found that 6.5 years after birth, children had the same risk for developing allergies or asthma whether or not they experienced prolonged or exclusive breastfeeding. The findings were published online by the *British Medical Journal* (Kramer MS et al. *BMJ*. doi:10.1136/bmj.39304.464016.AE [published online ahead of print September 11, 2007]).

However, the fact that breastfeeding does not appear to reduce allergy and asthma risk should not deter mothers from nursing their infants, said Michael S. Kramer, MD, lead author and professor of pediatrics, epidemiology, and biostatistics at McGill University, in

Montreal. "There are plenty of other good reasons to breastfeed," he said.

The Promotion of Breastfeeding Intervention Trial (PROBIT) involved mother-infant pairs receiving care at 31 Belarusian maternity hospitals and their affiliated polyclinics. Belarus was chosen because, like many Eastern European countries in the 1990s (when the trial began), it did not aggressively promote breastfeeding as the preferred method of infant feeding.

This allowed researchers to randomly assign the mother-infant pairs to either an experimental cohort, in which medical personnel were trained to teach better breastfeeding techniques and to encourage mothers to breastfeed for as long and as exclusively as possible, or a control cohort of traditional practices. As a result of the intervention, 72.7% of mothers in the experimental group were breastfeeding at 3 months, 49.8% at 6 months, 36.1% at 9 months, and 19.7% at 12 months. Of mothers in the traditional group, 60% were breastfeeding at 3 months, 36.1% at 6 months, 24.4% at 9 months, and 11.4% at 12 months.

The researchers also found that 43.3% of mothers in the experimental group were exclusively breastfeeding at 3 months while only 6.4% in the control group did so. Both groups demonstrated substantial declines in breastfeeding at 6 months, with just 7.9% of mothers in the experimental group and 0.6% in the control group still exclusively breastfeeding.

At 6.5 years follow-up, the researchers administered a questionnaire to parents of 13 889 children to elicit information about hay fever symptoms, eczema, and asthma. They also gave the children skin prick tests to determine sensitivity to dust mite, cat, birch pollen, mixed northern grasses, and *Alternaria* (fungi) allergens. No statistical differences between the experimental and control groups were found.

Kramer said his team also hopes to publish 6.5-year outcomes data looking at whether breastfeeding affects obesity, blood pressure, intelligence, behavioral issues, and dental health. They also are planning an 11-year follow-up to assess possible diabetes and cardiovascular risks. □