

## **Nurses attack hidden dangers of health care**

by Ann Melamed, RN

Today, many patients suffer from health conditions directly related to the environment in which they live and work. In addition, threats to patients' health often can be found within the health care setting itself.

### **The environment and public health**

Because they handle many toxic and biohazardous substances, it is imperative that nurses learn about the problems of medical waste and potential medical product toxicity. Environmentally preferable alternatives to current products and also to medical waste disposal choices do exist, but nurses have to know about them first before they can make educated choices and use their influence and collective power to demand an environmentally cleaner industry.

In its "Pollution Prevention Kit for Nurses," the ANA identifies basic, first steps that nurses can take to help make their hospitals more environmentally responsible (see box below). The kit includes a facilitator's guide, background information, Health Care Without Harm (HCWH) information and other resources.

### **The threat of plastics**

A growing body of evidence indicates that PVC plastics and the softeners (called phthalates) that leach from them may harm patients, particularly preterm neonates. In mid-July, after a two-year study, a National Toxicology Program (NTP) panel expressed serious concern that Di-ethylhexyl phthalate (DEHP), a phthalate in vinyl medical devices, may harm the reproductive organs of critically ill and premature male infants exposed during medical treatment. This is the first time that the NTP evaluated the reproductive and developmental toxicity of a chemical rather than its carcinogenicity, an important step in recognizing manifestations of chemical toxicity other than cancer risk alone.

DEHP does not bind with the plastic, so it can leak out of PVC medical products during medical procedures, or when PVC objects such as toys are chewed. Everyone is exposed to DEHP through off-gassing from vinyl products in the home and workplace, as well as from industrial emissions. However, infants and especially preterm neonates are receiving, in some cases, mega-doses of DEHP. Neonatal nurses should know what they can do to protect their tiny patients from the potentially harmful effects of DEHP.

DEHP is a reproductive and developmental neurotoxicant. The multiple and relatively high exposures that occur in neonatal intensive care units (NICUs) are significant. Many of these babies are exposed during blood and other intravenous infusions, respiratory therapy, enteral feedings and extra corporeal membrane oxygenation (ECMO). The multiple, combined exposures of neonates are potentially at or in excess of levels known to cause adverse health effects in relevant animal studies. These adverse effects have included testicular damage in the male offspring of rats exposed, suppressed or delayed ovulation, suppressed estradiol production, polycystic ovaries, reduced kidney function, kidney atrophy, reduced liver function, respiratory distress and decrease in heart rate and blood pressure.

To stop exposure of their patients to this toxicant, nurses can insist on PVC and DEHP-free alternatives to almost all items used in the NICU. Using such alternatives will reduce everyone's exposure, particularly the smallest and most vulnerable patients. For more information on DEHP and a list of some plasticized medical products in the NICU, read Neonatal Exposure to DEHP and Opportunities for Prevention at the HCWH website: go to [www.noharm.org](http://www.noharm.org) and click on "Library."

## Nurses band together

Nurses and nursing organizations are already significantly involved in the environmental and health and safety movements. Along with the ANA and the International Council of Nurses (ICN), some ANA constituent members associations (CMAs) belong to the Health Care Without Harm coalition and are actively working to change the impact that health care practices have on the environment (see box above).

For example, the Massachusetts Nurses Association will present at CLEANMED, 2001: An International Conference on Cleaner and Safer Medical Products, sponsored by the University of Massachusetts, Lowell, Health Care Without Harm and other groups. Slated for May 4-5 in Boston, the conference is being designed to accelerate the international development and diffusion of cleaner, safer and high-quality medical products by bringing together major buyers of healthcare products, vendors and university researchers. The Massachusetts nurses will identify adverse health effects from exposure to cleaning agents and disinfectants in the NICU and will discuss environmentally friendly cleaning products and processes for health care workers.

The Michigan Nurses Association is working on a health hazard evaluation request from the National Institute on Occupational Safety and Health to look closely at the autoclave that replaced an incinerator at the University of Michigan. There are concerns that the autoclave, while generally regarded as being an environmentally safer alternative to incineration, has not been rigorously tested for worker health and safety.

And in California, several nurses are involved in an inter-agency pilot program to implement Pollution Prevention (P2) programs in six San Francisco Bay Area hospitals. One of the most important aspects of this program is the information and expertise-sharing among members of the pilot program. The group hopes that other areas will use this as a model program to be implemented around the state.

Pollution prevention in health care does not just happen -- it takes a leader, and it takes commitment and recognition of the importance of environmental protection as a public health issue.

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### Nurses' pollution prevention

- Find out what happens to medical waste at your facility. Is it incinerated? If so, is it incinerated on-site? What type of incinerator is in use? Is it equipped with pollution control devices? Has it ever been tested for dioxin or mercury emissions?
- Start recycling paper in your office.
- Write an article for your hospital, clinic or workplace newsletter on environmental issues, pollution prevention or environmentally preferable purchasing.
- Advocate for PCV-free health care and encourage your facility to offer non-PVC products.
- Minimize your contribution to air pollution! Walk or carpool to work, and take public transportation when possible.
- Find out what happens to solid waste at your facility. Is it sent to a landfill or is it incinerated?
- Find out if your facility uses mercury-based technologies such as thermometers and blood pressure measuring devices. If so, find out if your facility has plans to minimize use of mercury products in the near future. Get your facility to take Health Care Without Harm's mercury free pledge.
- Eliminate mercury thermometers from your home.
- Find out if the red bags and sharps containers in use at your facility are cadmium-free. If not, request that the facility purchase cadmium-free containers and bags.

From ANA's Pollution Prevention Kit for Nurses. To order the kit (\$79.95; \$59.95 for state nurses association members), call (800) 637-0323 or go to [www.nursesbooks.org](http://www.nursesbooks.org) and enter Pub#9811LA.

### **Web Resources**

- Sustainable Hospitals Project at University of Massachusetts at Lowell: [www.uml.edu/centers/lcsp/hospitals](http://www.uml.edu/centers/lcsp/hospitals)
- Health Care Without Harm: [www.noharm.org](http://www.noharm.org)
- Nightingale Institute for Health and the Environment: [www.nihe.org](http://www.nihe.org)
- The Environmentally Preferable Purchasing (EPP) Work Group -- Resources for Healthy Hospitals: [www.geocities.com/EPP\\_how\\_to\\_guide/](http://www.geocities.com/EPP_how_to_guide/)
- Information on mercury: [www.epa.gov/seahome/mercury/src/mercmed.htm](http://www.epa.gov/seahome/mercury/src/mercmed.htm) or [www.nwf.org/greatlakes/resources/mercury.html](http://www.nwf.org/greatlakes/resources/mercury.html).

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