Environmental Stewardship
The nurse’s role in sustainability

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Hospitals in the United States produce more than 5 million tons of waste annually, according to Practice Greenhealth (2017), a nonprofit organization rooted in improving the healthcare sector’s sustainability and reducing its environmental footprint. As the most trusted profession in the United States and largest body of employees in the healthcare sector (U.S. Department of Labor & Bureau of Labor Statistics, 2015), nurses play a vital role in alleviating the burden on the environment caused by the healthcare system while continuing to maintain an excellent standard of care for patients.

The U.S. Environmental Protection Agency has stated that a major source of environmental pollution is derived from the incineration of medical waste (McDermott-Levy & Fazzini, 2010). Two substances, mercury and dioxin, are classified as possibly carcinogenic and carcinogenic, respectively (Agency for Toxic Substances and Disease Registry [ATSDR], 1999, 2011). Mercury causes a host of health effects, including developmental problems, digestive issues, neurologic disorders, and renal problems (ATSDR, 2011). Dioxins are produced through the incineration of polyvinyl chloride, more commonly known as PVC. PVC is prevalent in several plastic medical devices, such as catheters, oxygen masks, IV tubing, premixed IV fluid bags, and gloves (Lauer, 2009). Incineration of plastics containing PVC causes air pollution via particulate matter and can lead to health effects, such as skin rashes and discoloration, liver damage, and long-term glucose metabolism issues (ATSDR, 1999). This type of virgin plastic is reliant on crude oil for production, which can compromise air and water quality, not just for surrounding areas where it is sourced, but also globally (Richardson, Grose, Doman, & Kelsey, 2014). Polluted air matter can latch onto dust, snow, and water droplets and be transported around the globe. This poses a risk for water and food sources.

Fiscal Responsibility
From a business perspective, the financial toll hospital waste can have on an institution affects the bottom line of an organization. Nachtmann and Pohl (2009) gauged that, across the healthcare continuum, $10 billion is spent annually on disposal costs. One nurse-led waste-reduction initiative at a Washington hospital’s intensive care unit (ICU) was projected to save the institution more than $72,000 per year (Cockerham, Haverland, & Solvang, 2016). In the study by Cockerham et al. (2016), supply carts in ICU rooms were identified as lacking standardization regarding how they are restocked. This nursing team collaborated with infection control, material management, and their nursing colleagues to gauge which items are essential in the carts while adhering to infection control standards. Next, they itemized and calculated the costs of supplies before and after restandardizing. They concluded their cost savings when they added up the

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cost of supplies that were wasted before and after restandardizing. A fiscally responsible hospital can encourage nursing staff to help further educate and engage staff in similar initiatives.

**Staff Engagement**

For a practice change to occur, a shift in culture also must take place. The convenience and easy access to medical supplies may be temporarily eclipsed in favor of not allowing them to enter the waste stream unnecessarily. Developing an environmentally conscious culture requires an all-in approach from all facets of a hospital system. Morrow et al. (2013) reported on a successful waste-reduction practice change that was implemented in an intensive care setting and noted that “allowing staff to identify their own needs and then actively engaging them in finding solutions enhances learning and the adoption of a new practice” (p. 688). In addition, the model encompasses a variety of hospital employees, including hospital leadership, administration and nursing staff, procurement, dietary services, and environmental services.

For example, in a budget awareness campaign at a university hospital, nursing leadership aimed to cut costs for inpatient units by going green and reducing their supply budgets (Johnson et al., 2012). Leadership called on staff for input and suggestions, which enabled staff to be part of the solutions. Leadership engaged staff by giving them education and providing tools, such as posters and informational flyers, to help them effect change (Johnson et al., 2012).

Tackling issues that can be easily addressed is a way to start because it blazes a path for advanced problem solving. Using marketing tools, such as hospital and unit newsletters, and posting such signage above or around frequently disposed-of materials can help disseminate education to staff. Holding repeated lunch and learn sessions that attract all hospital employees and having representatives from every department as sustainability liaisons contribute to the reinforcement of how to reduce supply waste (McDermott-Levy & Fazzini, 2010).

Collaborating with procurement and material management, a green team can broach leadership about switching to more sustainable products and steering away from single-use disposable plastic products, thereby curbing their presence in waste streams. Once a pilot supply reduction project is deemed successful on one unit, it is easier for other units and areas throughout the hospital to implement a practice change because the groundwork has already been laid.

**Implications for Nursing**

Nurses can join a green team or spearhead the process of formulating one. A shared governance model, if it exists within the respective institution, is one way to swiftly and efficiently disseminate educational materials and perform workshops. This model “endorses a partnership between nursing leaders and direct care staff that promotes collaboration, shared decision making, and accountability for improving patient care and safety” (Gordon, 2016, p. 688). In addition, the model encompasses a variety of hospital employees, including hospital leadership, administration and nursing staff, procurement, dietary services, and environmental services.

**Conclusion**

Amid the many challenges facing the healthcare spectrum, nurses are crucial to maintaining vigilant care of patients while being environmental stewards. Reducing supply waste within hospital systems is in line with the core values of caring professionals. Inherently understanding that environmental issues are directly linked to issues seen in health care enables nurses to assemble, strategize, and lead the way for a sustainable future.

**References**


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