

With the largest body of employees in U.S. health care, the nursing profession is well positioned to tackle the challenges of waste reduction within hospital systems. The healthcare sector generates a massive amount of waste, contributing to environmental issues, such as air and water pollution. By unifying and engaging staff through shared governance models, nurses can reduce the overhead costs associated with waste management and help maintain fiscal integrity. Nurses have the ability to use their trusted skill sets and lead the way for sustainable, healthy communities and environments in which they serve.

#### AT A GLANCE

- Current healthcare waste disposal methods, such as incineration, generate toxins, including mercury, dioxin, and other air and water pollutants.
- Reducing medical supply waste can decrease overhead cost for institutions.
- Nurses comprise the largest profession in health care and are adept at educating, researching, and leading in waste reduction.

#### KEYWORDS

nursing; delivery of health care; waste management; pollution; sustainability

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# Environmental Stewardship

## The nurse's role in sustainability

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**H**ospitals 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 reprocessed and 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