

AORN Guidance Statement: Environmental Responsibility

Introduction

This document is intended to guide perioperative registered nurses in the development of environmentally responsible practices. This document may be used by health care organizations to provide direction for the creation of environmentally responsible policies and procedures. This guidance document addresses

- ◆ infectious and noninfectious waste management;
- ◆ recycling practices;
- ◆ resource conservation;
- ◆ supply conservation and management practices;
- ◆ reprocessing, reuse, repair and refurbishing;
- ◆ sterilization and disinfection; and
- ◆ construction for efficiency and conservation.

It is recognized that not all portions of this document may be usable by all health care organizations because of the varying standards and regulations set forth in various geographic locations. It also is recognized that the perioperative setting is varied and includes hospitals; obstetrical surgical suites; ambulatory facilities; physicians' offices; specialty centers for invasive procedures (eg, cardiac catheterization laboratories, radiology departments, endoscopy suites); and other areas where invasive procedures or interventions are performed.

Background

Nurses comprise a large single group of health care providers and are in a position to influence environmental management practices. Nurses have long played a role in the protection of the environment. In the 1800s, Florence Nightingale was one of the first nurses to advocate for a healthy environment.¹ Nurses have an ethical responsibility to actively promote and participate in resource conservation and to protect the environment.

US health care organizations generate in excess of two million tons of waste annually.² Approximately 85% of this waste is noninfectious, with a large amount being generated in the operating room.³ Inpatient facilities spend more than five billion dollars a year on energy consumption. Health care energy consumption is increasing to support new and existing technology.⁴ Sterilizing, heating and cooling processes, and hand sanitization contribute to use of water, a limited natural resource. In addition to waste generation, energy and water consumption has a significant negative impact on the environment.

Guidance Statement

The perioperative registered nurse should serve as a steward of the environment by being knowledgeable about perioperative practices that negatively affect the environment. Perioperative registered nurses should actively promote and participate in resource conservation. Effective resource conservation leads to an improvement of environmental health. The perioperative registered nurse should strive to understand the political, economic, and public health components of environmental responsibility.⁵ The following strategies provide a framework on which to build an environmentally responsible practice.

Infectious and Noninfectious Tissue and Waste Management

More than four million tons² of general waste are produced annually by US health care facilities.⁶ Waste materials can be classified as potentially infectious or noninfectious. Waste management is a major expenditure for health care organizations. Infectious waste management alone can consume as much as 20% of a hospital's annual budget for environmental services.⁷

Waste generated from the operating room includes potentially infectious and noninfectious waste as well as material that requires special disposal (eg, liquid chemicals, hazardous materials). Mercury-based products and dioxin generated by incineration of polyvinylchloride (PVC) are hazardous chemicals. Mercury, a heavy metal and neurotoxin, is a frequent contaminant found in medical waste. Dioxin, a known human carcinogen, has been implicated in cancer of the lung, thyroid, hematopoietic system, and liver as well as soft tissue sarcoma.⁸ Polyvinylchloride is found in many medical supplies, packaging, and building materials. The resulting air pollutants from medical waste incineration not only affect the local community, but also can migrate to pollute distant environments and populations.⁸ Disposal of mercury and medical waste are subject to regulation by local, state, or federal governmental agencies. Health care organizations must comply with the regulations.⁹

Perioperative nurses can significantly affect waste management practices by encouraging and implementing strategies that promote a safe and healthy environment. These strategies should be cost effective and conserve resources. Strategies