

Greening operating rooms benefit the bottom line and the environment

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Efforts to "green" operating rooms can result in cost savings for hospitals and reduce the environmental impact without compromising patient care, argues an analysis published in *CMAJ (Canadian Medical Association Journal)*.

"The [operating room](#) is a disproportionate contributor to [health care waste](#) and represents a high-yield target for change," writes Dr. Yoan Kagoma, Schulich School of [Medicine](#) & Dentistry, Western University, London, Ontario, with coauthors.

Operating rooms produce approximately 20%-33% of all waste in hospitals, and much of this waste is subjected to specialized high-energy processing which is expensive and has negative environmental and health impacts. Figures from 2007 indicate that US health care facilities contributed 8% of total greenhouse gas emissions and disposed of more than 4 billion pounds of waste, making the sector the second-largest producer of landfill waste after the food industry. In 2008, Canadian [hospital](#) activities were the second most energy-intensive activity, consuming the energy of 440 000 homes.

"In fact, a single operation may produce more waste than a family of four produces in a week," state the authors.

"Operating rooms pose a particular challenge to waste management because of the need for absolute sterility," write the authors.

"Fortunately, technologies and waste-reduction strategies have emerged

that satisfy the 'triple bottom line' (people, planet and profits), by reducing health care costs and environmental effects without compromising [patient care](#)."

Principles for greening operating rooms include:

- Separating waste into normal waste and biohazard or medical waste streams, as the latter requires high-energy processing, and training staff to differentiate. An estimated 50%-80% of normal waste is disposed of as hazardous waste.
- Investing in closed collection systems to discharge liquid waste into sanitary sewers, which reduces the amount of waste needing high-energy treatment.
- Using smart monitors to reduce energy use when operating rooms are vacant.
- Partnering with medical equipment companies to promote greener packaging; a major contributor to waste is plastic packaging.
- Donating unused equipment to developing countries.
- Reprocessing single-use devices to make them suitable for reuse.
- Exploring alternative disposal methods to incineration, which is responsible for significant emissions of dioxin and furan in Canada.
- Creating environmental stewardship staff teams to promote and coordinate greening activities.

"At a time when Canadian hospitals and health care personnel are often working above capacity, one may argue there is little room for greening efforts," write the authors. "However, in an effort to cut costs, many health care facilities are being asked to improve efficiency. Our analysis has shown that greening initiatives in the operating room are easily implemented, require low capital investment, have a short payback

period and can generate substantial cost savings."

More information: www.cmaj.ca/lookup/doi/10.1503/cmaj.112139

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