

Gynecologic oncology surgeons driving environmental and economic impact reduction

Santiago Scasso , Montevideo, Uruguay; Joel Laufer , Montevideo, Uruguay; Diego Arena, Montevideo, Uruguay; Marcos Trinidad, Montevideo, Uruguay and Walter Pereyra, Montevideo, Uruguay

The current generation is witnessing the environmental repercussions brought on by human actions, necessitating urgent global efforts. The healthcare system, responsible for 4.9% of global carbon emissions, demands targeted interventions. Notably, operating rooms contribute significantly to greenhouse gas emissions and energy consumption (six times higher per square meter than hospital average), and generate nearly 30% of the hospital's regulated medical waste. Surgery emerges as a major driver of environmental impact within the healthcare system.

Terms like 'green operating room' and 'sustainable surgery' are increasingly prevalent in the international literature. As surgeons and leaders in the operating room, we bear the responsibility of implementing change. Initially, raising awareness and taking actions on an individual and collective level within our spheres of influence can yield significant impacts. In the context of the generation and proper disposal of regulated medical waste, studies indicate that in institutions lacking a focus

on the accurate classification of regulated medical waste, 90% of material is deemed unnecessary for placement in 'red bags'; once misclassified, this material cannot be reclassified, incurs higher disposal costs, and necessitates incineration, thereby contributing to carbon dioxide emissions and release of polluting gases.

Our institution, Hospital Britanico Montevideo, with 183 beds and 10 000 surgical procedures annually, generates approximately 15 000 kg of medical waste/month (180 tons/year). Regulated medical waste management costs 10 times more than common solid waste disposal, amounting to an annual cost of \$450 000. This not only signifies a substantial environmental impact but also underscores the potential for significant economic savings for institutions, especially in regions where both economic and environmental resources are limited.

The COVID pandemic, during which generation of regulated medical waste grew exponentially, led us to raise awareness and seek action strategies. We currently have a computerized system for measuring regulated medical

waste production at an institutional level and by unit (operating room and intensive care unit), which allows us to target actions and measure results. To date, we have implemented the following strategies: (a) a multilevel institutional team called the 'green team'; (b) state our objectives and goals with a SMART method (specific, measurable, achievable, relevant, and time-bound); (c) reduce regulated medical waste at least by 50% during the first year; (d) highlight the issue, educate and change culture in the operating room team (surgeons, staff, scrub nurses, anesthesiologist, and cleaning staff); and (e) reward results and changes in habits by providing feedback and recognition to the staff and collaborators of the unit involved ([Figure 1](#)).

A successful pilot plan in the gynecology department has been sustained for over 12 months, demonstrating significant success. Cost savings are being reinvested in ongoing sustainability initiatives, such as the hospital's membership in the Global Green and Healthy Hospitals network, the



Figure 1 Educating and engaging colleagues and collaborators in the operating room (OR), identifying barriers and solutions to create changes. The anesthesiologist, OR staff, and Housekeeping Department are involved.

Corners of the world

implementation of a solar water heating system, and the establishment of sustainable purchasing practices. Successful and enduring programs require strong leadership and continuous monitoring. As a gynecologic oncology community, active involvement is essential; as Mathatma Gandhi said, we must 'embody the change we aspire to see in the world'.

Correspondence to Dr Santiago Scasso, Gynecology Department, Gynecologic Oncology Unit., Hospital Britanico, Montevideo, Montevideo, Uruguay; sscasso@gmail.com

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ORCID iDs

Santiago Scasso <http://orcid.org/0000-0002-0149-6752>

Joel Laufer <http://orcid.org/0000-0002-8554-8280>