



## Editorial

# Sustainable surgery: innovative movement to impact the needs of the COP27 climate change conference through surgery

Briceyda Galvan-Leal <sup>a</sup> , Graciela Cristina Pedraza-Nieves <sup>b</sup> , Yelson Alejandro Picón-Jaimes <sup>c,\*</sup> 

<sup>a</sup> Department of Medicine, Nuevo Hospital de Bocagrande, Cartagena, Colombia

<sup>b</sup> Department of Gynecology, Clínica del Cesar, Valledupar, Colombia

<sup>c</sup> Facultad Ciències Salut Blanquerna, Univ Ramon Llul, Barcelona, Spain

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## Cirugía sostenible: movimiento novedoso para impactar en las necesidades de la conferencia sobre cambio climático COP27 desde la cirugía

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The Sustainable Development Goals consist of an interconnected global agenda to promote human development by 2030. Among these, climate change is one

of the most important because it relates to many others, such as the development of affordable and non-polluting energy, promoting underwater life, life on land ecosystems, zero

\* Corresponding author.

E-mail address: [colmedsurg.center@gmail.com](mailto:colmedsurg.center@gmail.com)

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hunger, and, even though many do not believe it, health and well-being [1]. The dynamics of climate change affect various determinants of health, through social and community networks, such as food production, environment, water quality, and lifestyles [2]. Thus, all fields of science are encouraged to implement strategies to contribute to this goal, and medicine is no exception [3]. After the 27th United Nations Conference on Climate Change, held in 2022 [4], a group of African biomedical journal editors and other collaborators discussed the needs of Africa regarding the impact of climate change on quality of life and the health prognosis of the region's population. The editors emphasized the need to propose new options that contribute to improving the capacity to provide health care, but taking into account the triad formed by the environment, health, and population, mainly due to the influence that the ecosystem generates on the epigenetics and dynamics of population health determinants [5]. Surgery is a medical specialty known for the high volume of waste produced due to the numerous use of supplies and high demand for care [6]. Therefore, one of the discussed points was the search for a plan that could influence clinical and biological waste from surgery. Some authors argued that it was not possible, while others argued that it was [5]. Is there any option to contribute to the environment from this specialty today?

Sustainable surgery (or green surgery) is a novel movement described in recent years, with the aim of modifying the functioning of surgical services so that surgical capacity and training can be guaranteed while protecting the environment [7]. Among the points addressed in this new discipline is the reduction of carbon production during surgeries, as well as the reduction of surgical waste to avoid contributing to water, air, and soil pollution [7-9]. The available evidence on this topic has not been able to generate a substantial change due to the lack of large-scale studies, and because education on this topic for both surgical teams and patients is insufficient [7]. However, it is clear that this goes hand in hand with the need to educate the population on sustainable development goals and health determinants.

Several authors have expressed the need for a mutual agreement between the surgical community and industry for the design and production of devices that contribute to this initiative [7-9]. The use of reusable devices and instruments with less packaging needs. Also, the use of eco-friendly inputs for the design of surgical devices. However, as Nepogodiev & Aneel [7] affirm, it is necessary for green hospitals to promote a general movement that includes all medical departments, so that there is congruence between the multidisciplinary approach of patients with surgical diseases that are also managed by other specialties [7,9].

Likewise, promoting telemedicine activities that reduce the need for transportation in low-risk patients undergoing post-surgical follow-up.

Sustainable healthcare is currently a challenge in global health, considering that the economy, equity, and environment are determinants of health that establish the social pattern of community health, as well as surgical outcomes [8, 9]. A postoperative patient is at higher risk of infection at the surgical site or other complications in an unhygienic environment exposed to soil microorganisms, disease-carrying vectors, without a potable water system or biological waste drainage system. Thus, medicine must also aim to have a direct impact on the environment, and sustainable surgery is an excellent initiative. This also allows us to observe how, over time, and based on the needs of patients and surgical teams, the objectives of global surgery are expanding and becoming increasingly relevant [10], as we are aware that future pandemics will come and have a substantial impact on the functioning and sustainability of surgical services. Latin America and the Caribbean are regions significantly affected by these needs [8]; therefore, the dissemination of sustainable surgery should be a new line of research for academic surgeons and surgical departments in the region, in order to evaluate the impact in the near future.

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## 1. CONFLICT OF INTERESTS

The authors have no conflict of interest to declare. The authors declared that this study has received no financial support.

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