



## EDITORIAL

# Anesthesia services management, economics, and new technologies



A significant number of us are keen on expanding our knowledge of anesthesia service management and its intricacies, eagerly anticipating this year's CBIGS (Congresso Brasileiro de Inovação e Gestão em Saúde, Brazilian Meeting on Health Management and Innovation). While we await CBIGS, this issue of the Brazilian Journal of Anesthesiology (BJAN) will provide invaluable insights into the latest evidence for managers.

Anesthesia services must consider various competing perspectives, given that they often serve multiple clients simultaneously, including patients, surgeons, and hospitals. Achieving balanced results that satisfy these different perspectives is challenging. In Brazil, residency programs tend to emphasize on clinical and practical knowledge, making it easier for most providers to satisfy patients' and surgeons' perspectives. Nonetheless, hospital managers' requests may appear peculiar and daunting, as they frequently summon anesthesia services leaders to take measures to enhance efficiency and expand coverage, rather than focus on clinical outcomes. In this editorial, we explore some pertinent topics related to efficiency (economics) and coverage (operating room management).

In this edition, BJAN invites leaders of anesthesia services to peruse the new articles we have selected to enhance their understanding of operating room management and anesthesia efficiency.

## Operating room management

Services that experience high demand for surgeries should take into account in their strategic planning the need to attract procedures that generate higher profits. It is important to be cautious when investing in procedures with high expected contribution margins, such as complex surgeries, as their hourly profitability may turn out to be low if either they take longer than expected or if their length of stay is longer than predicted, as evidenced by Saporito et al.<sup>1</sup> Anesthesiology groups should also consider this idea, as investing in performing low-complexity procedures can sometimes be

more profitable than investing in high-complexity procedures. Low-complexity procedures typically exhibit consistent demand and shorter durations, thus yielding a high hourly profitability.

Another issue regarding high complexity is related to the size of nurse and anesthesia teams, as larger teams present high fixed costs and variable demand results in lower profitability. Optimizing the tasks of Postoperative Care Unit nurses, for example, could reduce the risk of clinical complications, nurse burnout, and improve efficiency, as suggested by Vacheron et al.<sup>2</sup> This interesting study employs an artificial intelligence model (C 5.0) to select the primary predictors of the type of multitask performed. Leaders can directly apply the study's results and indirectly adopt the same methodology to analyze internal data, thereby learning from this exemplary approach.

## Anesthesia efficiency and new technologies

In the literature, one significant topic discussed with hospital managers about anesthesia efficiency is the choice of anesthesia for some procedures, as the direct costs for regional or general anesthesia are readily available for them, which is controversial. Graff et al.'s literature review found inconsistent results, except in cases where there is a high demand for ambulatory anesthesia and well-systematized processes.<sup>3</sup> Therefore, managers must exercise caution when discussing this matter with anesthesia providers. This challenge is further heightened by the findings of Calciolari et al, which indicate that regional anesthesia is associated with significant adverse effects and costs.<sup>4</sup>

In addition, they discuss the challenge of evaluating the cost-effectiveness of implementing new technology in anesthesiology. Due to the lack of studies on cost-effectiveness for most technologies presented to us, which tend to focus on efficacy, anesthesiologists face challenges in this area. As such, there is high demand for formal cost-effectiveness studies, prompting governments and larger healthcare

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organizations to invest in specialized teams to assess the economics of new technologies, such as REBRATS (<https://rebrats.saude.gov.br/>) and numerous “NATS” (Núcleo de Avaliação de Tecnologias) found in almost every hospital in Brazil. Without such studies, anesthesia service leaders face pressure from their teams and the industry, which often makes promises or raises expectations of higher clinical quality, while also facing questions from hospital administrators seeking evidence for cheaper alternatives, including not using such technology.

Babazade et al provided a timely cost-minimization analysis for a new technology, to replace the loss of resistance technique used to identify the epidural space, and that has been shown to reduce costs by mitigating postdural puncture headache.<sup>5</sup> While this may not be the most ideal design for decision-making, particularly with regard to cost-utility or cost-effectiveness studies, it still provides us with superior evidence when compared to most of the new technology we currently use.





We hope our readers get a sip of all this new knowledge and apply it to improve their services while we wait for CBIGS.

## Conflicts of interest

The authors declare no conflicts of interest.

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