


# Maximizing Efficiency and Reducing Robotic Surgery Costs Using the NASA Task Load

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**Event:** #17532

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### Purpose/Goal

To provide the learner with knowledge of best practices related to maximizing efficiency and reducing robotic surgery costs using the NASA Task Load Index (TLX).

### Objectives

1. Discuss the evolution of robotic minimally invasive surgery (MIS) procedures.
2. Discuss how robotic procedures have affected staffing needs.
3. Describe how regulatory requirements can affect staffing needs for robotic procedures.
4. Identify how managers can support the need for increased staffing.

<http://dx.doi.org/10.1016/j.aorn.2017.08.004>

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Carrie Walters, DNP, MSN/HSM, RN, CNOR, NEA-BC, NE-BC, and Paula J. Webb, DNP, RN, NEA-BC, have no declared affiliations that could be perceived as posing potential conflicts of interest in the publication of this article.

The behavioral objectives for this program were created by Helen Starbuck Pashley, MA, BSN, CNOR, clinical editor, with consultation from Susan Bakewell, MS, RN-BC, director, Perioperative Education. Ms Starbuck Pashley and Ms Bakewell have no declared affiliations that could be perceived as posing potential conflicts of interest in the publication of this article.

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## ABSTRACT

Perioperative leaders at our facility were struggling to meet efficiency targets for robotic surgery procedures while also maintaining the satisfaction of the surgical team. We developed a human resources time and motion study tool and used it in conjunction with the NASA Task Load Index to observe and analyze the required workload of personnel assigned to 25 robotic surgery procedures. The time and motion study identified opportunities to enlist the help of nonlicensed support personnel to ensure safe patient care and improve OR efficiency. Using the NASA Task Load Index demonstrated that high temporal, effort, and physical demands existed for personnel assisting with and performing robotic surgery. We believe that this process could be used to develop cost-effective staffing models, resulting in safe and efficient care for all surgical patients. *AORN J* 106 (October 2017) 283-294. © AORN, Inc, 2017. <http://dx.doi.org/10.1016/j.aorn.2017.08.004>

Key words: *robotic surgery, OR staffing, OR workload, NASA TLX, OR efficiency.*

The evolution of surgical technique and changes in surgeon practices for first assisting in the OR have significantly affected staffing requirements for robotic surgery procedures. Perioperative leaders are expected to surpass efficiency metrics goals, improve surgeon and employee satisfaction scores, and comply with regulatory requirements, all while reaching set productivity and budget targets.<sup>1-3</sup> Perioperative leaders at an urban health care organization in Dallas, Texas, expressed concern about the inability to meet efficiency and satisfaction metrics goals, especially for robotic minimally invasive surgery (MIS) procedures. They monitored efficiency reports on a monthly basis along with employee and surgeon satisfaction feedback that validated their concerns. Employees and surgeons complained that there was not enough help to coordinate the workload

required for robotic procedures, which resulted in increased room setup times, delays in procedure turnover, and overall dissatisfaction among the surgical team. Leaders became concerned because the reduced number of staff members who wanted to work in the robotic OR meant that employees who did staff those procedures had to work overtime to finish them. We discuss the steps we took to determine the workload of OR staff members working in the robotic OR to facilitate development of a safe, cost-effective staffing plan for these procedures.

## THE EVOLUTION OF MIS

There was an increase in MIS procedures beginning in the early 1980s because MIS techniques reduced postoperative

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