

Cross-utilization of Nurses and Technicians in the OT for Maximizing Efficiency and Reducing Healthcare Costs

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Received: January 30, 2025

Published: March 03, 2025

Abstract

Cross-utilization of nurses and medical technicians is a practice that is gradually gaining traction around the world. It entails equipping nurses and Operation Theatre (OT) technicians with more skills, knowledge and education so that they can take up additional roles and responsibilities in the healthcare delivery system. This practice is associated with numerous benefits including reducing cost for hospitals as well as enhanced patient outcomes. This paper critically analyses the cross-utilization in context of OT nurses and technicians. The advantages and benefits of cross-utilization among nurses and technicians in the operation theaters, and the potential barriers and challenges are discussed.

Introduction

Cross-utilization of anesthetic and nursing staff in the Operating Room (OR) may help to save healthcare costs. This approach can boost production while eliminating the need for new personnel by equipping and teaching these professionals to take on additional duties [1]. Finding new and better methods to reduce waste and increase efficiency in healthcare delivery is a key objective in the profession right now. As part of this concept, anesthetic technicians and OT nurses' duties may be merged during moments of low activity in the operating room. In addition to focusing on cost-cutting measures, this strategy highlights the need and utility of a flexible, team-based approach for improving patient outcomes [2].

The synergy created through the working together of the technicians and nurses as a cohesive team permits them to efficiently carry out a wide range of tasks and responsibilities, not confined to their traditional roles. This can prove particularly useful, for instance, during a surge in the number of patient numbers during a pandemic or a disaster, when the healthcare system must adapt swiftly to meet the increased demand for patient care [3]. In such instances, the cross-utilization of professionals such as OT nurses and anesthesia technician provides a dynamic solution. The anesthesia technicians, equipped with their expertise in the operation of monitoring equipment and patient care techniques, can collaborate effectively and seamlessly with the nurses who possess in-depth knowledge and patient care skills [3]. This interdisciplinary approach permits the healthcare system to allocate resources more efficiently, balancing the workforce and guaranteeing that specialized profes-

sionals are readily available where they are required the most. Additionally, the flexibility occasioned by cross-utilization allows healthcare institutions to swiftly reintegrate specialized professionals into their traditional roles once the increased demand subsides [3]. This adaptability is key for ensuring the standard of care, ensuring that patients continue receiving the specialized attention they need when the healthcare system returns to its normal state.

Advantages of Cross-Utilization among Nurses and Medical Technicians

Optimization of Workforce Utilization

In instances of reduced work-related activity inside the operating rooms, anesthetic technicians may assume the responsibilities typically carried out by post-operative care and ICU nurses. In a state of relative stability, anesthesia technicians may also provide support to nurses in specialized procedures such as central venous line insertion, while conversely, nurses may reciprocally aid OT technicians in setting up infusion pumps and fixing stoma bags. By adopting this approach, the hospital may optimize the use of its personnel while ensuring that patient care and treatment quality remain uncompromised [4].

Enhanced Flexibility and Adaptability

Incorporating cross-utilization practices enhances the flexibility of the healthcare workforce. The collaboration between anesthesia technicians and nurses forms a synergistic team capable of effectively completing a diverse array of activities. During periods characterized by increased demand, a healthcare system that is responsive exhibits the capacity to be adapt-



Figure 1: An interdisciplinary approach, with opportunities provided to different medical care professionals to gain ancillary skills, could result in improved patient care in times of increased patient load, and reduced costs during times of reduced hospital admissions.

able, thereby facilitating the integration of specialized professionals into their respective and associated roles [3].

In practice, the synergy between the anesthesia technicians and nurses as an example of cross-utilization, improves the capacity of the healthcare system to respond to increased demand and also underscores the adaptability that is key in healthcare delivery.

Cost effective Staffing Strategies

Cross-utilization in the operation room has the potential to drastically lower healthcare costs. It is feasible to prevent overstaffing and related expenses by allowing anesthesia technicians to double as nurses and vice versa during times of low patient flow [5]. It also minimizes the time necessary for recruiting, training, and managing temporary or contract personnel.

Efficient Utilization of Skills

Anesthesia technicians and nurses' skills overlap in areas such as patient care, monitoring, and perioperative management. Many of the duties of a nurse and an anesthesia technician coincide, such as handling equipment, preparing patients, and delivering anesthetic drugs [6]. Consequently, during times of low demand in the wards, or when anesthesia technicians are on leave, nurses may be of significant service to anesthesiologists owing to their experience with basic anesthetic methods.

Improved Patient Care and Safety

Anesthesia providers and nurses working together in the op-

erating room have the potential to improve patient outcomes. Staff members that are able to quickly and alertly adjust to changing circumstances provide better care to their patients and create a more positive environment overall [7]. There are dozens of small things that can have a significant impact on patient outcome. These include providing heating blankets, placing pillows, aseptic laying out of equipment and instruments, proper fixation of tubes (such as endotracheal tubes and intravenous catheters), arranging sutures and other disposable like Gelfoam, etc, all of which if carried out as team-work and with speed can make the working environment better for the surgeons and benefit the patients.

Cross Training and Skill Development

Professionals implementing cross-utilization effectively will have invested much in training for their expanded roles. Employees benefit from cross-training in the healthcare industry because it helps them grow as professionals and get a deeper appreciation for the roles their colleagues play [8]. There is an old adage which says "The eyes will only see what the brain knows". By opening up avenues of exposure to different training modules, the awareness of medical professionals can be enhanced significantly.

Marinating Quality and Standards

Cross-utilization should not result in a decline in surgical standards or treatment quality; this is something that must be emphasized. Appropriate training, adherence to standards and

ongoing evaluation are required to keep specialized and transferable skills at a high level of expertise [9]. When carried out germanely, quality improvement is a net benefit of the cross-utilization of nurses in the ICU healthcare setting. An ICU nurse with expanded roles, may be more proficient in certain procedures and interventions [10]. The increased proficiency leads to enhanced healthcare outcomes, reduced medical errors, and a greater level of quality of care, ultimately benefiting the critically sick patients.

Promoting Team Collaboration

Health-care providers who use one another's services build a stronger feeling of teamwork and cooperation. Teams grow stronger and more cohesive when duties are divided across departments. The quality of patient care will increase as team communication and problem-solving abilities improve [11].

Lastly, utilizing anesthesia technicians and nurses interchangeably in the operating room during low patient traffic times is a realistic method to maximize the efficiency of the existing workforce, save money without jeopardizing treatment quality, and benefit patients.

Challenges and Barriers to Cross-Utilization among Health Care Workers

The cross-utilization of nurses and technicians has its share of challenges and barriers. One of these challenges is the resistance from healthcare professionals, who might be protective of their specialized roles [12]. Thus, the OT nurses might deem it non ethical to take up additional roles and tasks if they encroach on the domain of other healthcare workers' tasks. The training and educational requirements is another challenge in the successful cross-utilization of nurses and technicians. Often, the successful cross-utilization requires additional training and education [12]. Thus, the personnel require ongoing professional development to gain proficiency in new areas which might be time-consuming and is resource intensive.

Legal and regulatory considerations is another challenge. The legal barriers might limit the extent to which the personnel can take on expanded roles and responsibilities [12]. The licensing and scope of practice regulations may vary according to the jurisdiction, and healthcare institutions must ensure compliance with the various regulations when implementing the cross-utilization programs. Another limitation is the patient safety concerns [1]. Concerns regarding patient safety may arise when medical personnel take on new responsibilities and it is vital to ensure that the personnel are adequately trained in their expanded roles in order to mitigate these concerns. In short, the barriers to effective cross-utilization include Inter-professional collaboration challenges [1], resistance form the nursing leadership, resource constraints, and the patient and family expectations.

Conclusion

The concept of cross-utilization among nurses and medical

technicians is exhilarating, and provides a promising avenue for improving patient care and adaptation to the increasingly ever-changing landscape of healthcare delivery. While not without its share of problems, cross-utilization holds the potential of maximizing the expertise of the highly skilled professionals, improving the workplace flexibility, and ultimately enhancing the quality of care provided to patients. To successfully navigate the barriers and harness the benefits of cross-utilization, healthcare institutions ought to invest fully in comprehensive training, foster a culture of collaboration, and remain agile in adhering to the legal and regulatory requirements. By adopting and embracing a transformative approach, the healthcare industry can ensure that the services and skills of medical personnel are fully utilized, while keeping costs in check.

References

1. Frisch NB, Berger RA. Navigating the Limitations and Obstacles of TJA in a Free-Standing ASC. In *Outpatient Hip and Knee Replacement: Implementation and Essential Techniques*. Cham: Springer International Publishing, 2023; pp. 91-104.
2. Blomberg AC, Bisholt B, Nilsson J, Lindwall L. Making the invisible visible—operating theatre nurses' perceptions of caring in perioperative practice. *Scandinavian journal of caring sciences*, 2015; 29(2): 361-368.
3. He AJ, Tang VF. Integration of health services for the elderly in Asia: A scoping review of Hong Kong, Singapore, Malaysia, Indonesia. *Health Policy*, 2021; 125(3): 351-362. [10.1016/j.healthpol.2020.12.020](https://doi.org/10.1016/j.healthpol.2020.12.020).
4. Zaccagnini M, Pechacek JM. *The doctor of nursing practice essentials: A new model for advanced practice nursing*. Jones & Bartlett Learning, 2019.
5. Malloch K, Dunham-Taylor J, Krueger J. *Workload management. Financial management for nurse managers: Merging the heart with the dollar*, 2010; 183-242.
6. Leedal JM, Smith AF. Methodological approaches to anaesthetists' workload in the operating theatre. *British journal of anaesthesia*, 2005; 94(6): 702-709. DOI: [10.1093/bja/aei131](https://doi.org/10.1093/bja/aei131).
7. Epstein NE. Multidisciplinary in-hospital teams improve patient outcomes: A review. *Surgical neurology international*, 2014; 5(Suppl 7): S295.
8. Hernaus T, Černe M, Škerlavaj M. The interplay between relational job design and cross-training in predicting employee job/task citizenship performance. *Human Resource Development Quarterly*, 2021; 32(4): 625-646. <https://doi.org/10.1002/hrdq.21427>.
9. Ericsson KA. Deliberate practice and the acquisition and maintenance of expert performance in medicine and related domains. *Academic medicine*, 2004; 79(10): S70-S81. DOI: [10.1097/00001888-200410001-00022](https://doi.org/10.1097/00001888-200410001-00022).
10. Aydas OT, Ross AD, Scanlon MC, Aydas B. New results on integrated nurse staffing and scheduling: The medium-term context for intensive care units. *Journal of the Operational Research Society*, 2021; 72(12): 2631-2648. DOI: [10.4103/2152-7806.139612](https://doi.org/10.4103/2152-7806.139612).
11. Ambrose-Miller W, Ashcroft R. Challenges faced by social workers as members of interprofessional collaborative health care teams. *Health & social work*, 2016; 41(2): 101-109. DOI: [10.1093/hsw/hlw006](https://doi.org/10.1093/hsw/hlw006).
12. Goh ML. *The quality of nursing care and workload management in a tertiary hospital tending multicultural patients (Doctoral dissertation, Itä-Suomen yliopisto)*, 2017.