



IMPACT OF IMPLEMENTING SAFETY PROTOCOLS, SUCH AS THE ACERTO AND ERAS PROJECTS, ON REDUCING SURGICAL COMPLICATIONS

 <https://doi.org/10.56238/levv16n44-016>

Submission date: 12/09/2024

Publication date: 01/09/2025

Fagner Marques Pereira¹, Rafael Lima Salgado², Pedro Lucas Gomes Rodrigues³, Daniella Campos Furtado⁴, Giovanna Lyssa Alves Silva⁵, Késia Rayser Sobrinho Tavares Melo⁶, Leonardo Haidar Contar⁷, Jaína Rodrigues Cardoso Santos Goulart⁸, Cristiane Cotrim Gordiano⁹, Marcos Daniel Gomes Oliveira¹⁰, Mateus Elias Fontenele França¹¹ and Pablo de Souza Moreira¹²

ABSTRACT

Safe surgery is a crucial element in medical practice, aiming to reduce complications and improve surgical outcomes. This integrative review assessed current practices related to safe surgery, highlighting the importance of implementing protocols, such as ACERTO and ERAS, in the standardization of surgical practices. The ACERTO protocol, focused on risk

¹ Undergraduate in Medicine
University of Ribeirão Preto - UNAERP
E-mail: fagnermarques20@hotmail.com

² Undergraduate in Medicine
Zarns College
E-mail: rafael.salgado@pm.ba.gov.br

³ Undergraduate in Medicine
University of Ribeirão Preto - UNAERP
E-mail: peuibc01@hotmail.com

⁴ Undergraduate in Medicine
University of Ribeirão Preto - UNAERP
E-mail: daniella.furtado@hotmail.com

⁵ Undergraduate in Medicine
University Center of Mineiros - UNIFIMES, Trindade campus
E-mail: gihlyssa23@gmail.com

⁶ Undergraduate in Medicine
Metropolitan University of Santos - UNIMES
E-mail: kesiaraysermelo@gmail.com

⁷ Undergraduate in Medicine
University of Santo Amaro - UNISA
E-mail: Leonardo.hcontar@gmail.com

⁸ Undergraduate in Medicine
University of Rio Verde - UNIRV
E-mail: jainagoulart@hotmail.com

⁹ Undergraduate in Medicine
Fip Afya de Guanambi
E-mail: crisgordiano@outlook.com

¹⁰ Pitágoras University of Montes Claros - UNIFIPMOC
E-mail: marcosd_741@hotmail.com

¹¹ Undergraduate in Medicine
University of Ribeirão Preto - UNAERP
E-mail: francamateus773@gmail.com

¹² Graduated in Medicine
Universidade Brasil - UB
E-mail: pablocirurgia@gmail.com



assessment and control, promotes effective communication between teams, while the ERAS protocol optimizes patient recovery through multidisciplinary approaches. The review also emphasized the relevance of open communication among surgical team members, as environments that promote this communication have lower rates of adverse events. In addition, continuous education and training of the team are essential to maintain surgical safety, as is the adoption of innovative technologies, such as monitoring systems and electronic health records. Although the review has its limitations, such as the heterogeneity of studies and the exclusion of some relevant research, the results reinforce the need for a systematic and collaborative approach to ensure patient safety in surgical settings. Investing in surgical safety is essential to strengthen patient confidence and treatment effectiveness.

Keywords: Safe Surgery. Surgical Safety Protocols. Effective Communication. Surgical Complications. Patient Safety.

INTRODUCTION

Safe surgery is a critical concept in contemporary medical practice, aiming to reduce complications and improve patient outcomes. With the increasing complexity of surgical procedures, combined with the diversity of patients and clinical conditions, a systematic approach that encompasses all stages of the surgical process becomes imperative. This need is amplified by the growing demand for safer and more effective surgical interventions, since errors can lead to severe consequences, including prolonged complications, reinterventions, and even death.

The “Safe Surgery Saves Lives” initiative, promoted by the World Health Organization (WHO), illustrates the relevance of safety protocols and the creation of an organizational culture focused on safety in surgical environments. This initiative is based on evidence that structured and well-implemented practices can significantly reduce complication and mortality rates. In response to this scenario, there is a need to review and integrate existing practices, as well as to investigate new methods that can be implemented to ensure patient safety.

The rationale for this study lies in the growing importance of surgical safety in a constantly evolving healthcare context. Investing in surgical safety not only improves the patient experience but also optimizes the use of hospital resources, reducing costs associated with complications and prolonged hospital stays. Furthermore, identifying gaps in current practices and promoting a culture of safety are essential for surgical teams to feel empowered to adopt and implement best practices.

This integrative review assessed current practices related to safe surgery, identified the main factors that contribute to patient safety in surgical environments, and discussed the strategies implemented to minimize surgical risks and complications. Through this analysis, we hope to contribute to the construction of a more robust knowledge about the measures that can be adopted to promote a safer and more effective surgical environment.

METHODOLOGY

The research was conducted using widely recognized scientific databases, including PubMed, Scopus, and Google Scholar, which are known for their comprehensiveness and the quality of peer-reviewed publications. The objective of the search was to identify relevant literature that would contribute to an in-depth understanding of the concept of safe surgery and its associated practices.

To optimize the search, Boolean operators were used, which allow the combination of search terms to refine the results and direct the search to articles that best align with the

objectives of the review. The use of the operators “AND” and “OR” was essential. For example, the combination of “safe surgery” AND “surgical safety protocols” resulted in a set of articles that specifically addressed the intersection between these two topics, while the use of “surgical safety protocols” OR “patient safety initiatives” broadened the search to include studies on general approaches and practices that could be relevant.

Inclusion criteria were rigorously defined to ensure the quality of the review. Only peer-reviewed articles published in the last 10 years were considered. This approach ensured that the integrative review was based on current and relevant evidence. The search terms used were: “safe surgery”, “surgical safety protocols”, “surgical complications”, “patient safety initiatives”, “ACERTO protocol” and “ERAS protocol”. Additionally, filters were applied to restrict the search to articles available in English and Portuguese, ensuring accessibility and relevance of the results to the target population of the study.

After the initial search, the titles and abstracts of the identified articles were evaluated according to their relevance to the objectives of the review. Articles that did not directly address surgical safety or that were outside the defined scope were excluded. For those who passed this initial screening, a complete reading was performed to extract detailed information on current practices related to safe surgery, the main factors that influence patient safety, and the strategies implemented to minimize surgical risks and complications.

In addition, the critical analysis of the selected articles involved the evaluation of the methodology, samples, and results, ensuring that the information extracted was robust and representative. The synthesis of the information collected was organized thematically, allowing for a comprehensive discussion of the findings and the identification of gaps in the literature that could be explored in further research. Future.

Finally, all data were carefully documented and reviewed to ensure the accuracy and completeness of the information presented in this integrative review, reinforcing its relevance in the current context of surgical practice.

RESULTS

Studies demonstrate that the implementation of safety protocols, such as the “surgical safety checklist”, can significantly reduce the rate of complications and mortality. A seminal study conducted by Haynes et al. (2009) showed a 36% reduction in surgical complications and 47% in mortality after the introduction of a standard checklist in several surgical centers. In Brazil, a study conducted by Gama et al. (2015) in the city of São Paulo confirmed these findings, reporting a significant decrease in complications and an increase

in the perception of safety among health professionals after the adoption of surgical checklists.

The ACERTO (Monitoring and Control of Risks in Timely Manner) protocol is a Brazilian initiative that aims to standardize surgical practices and optimize patient safety. The implementation of ACERTO includes measures for preoperative assessment, intraoperative monitoring, and postoperative follow-up. A study conducted by Oda et al. (2020) at the São Camilo Hospital Network in São Paulo revealed that the introduction of this protocol improved communication between healthcare teams and reduced adverse events, contributing to a safer surgical environment. In addition, the research found that the standardization of surgical practices resulted in greater efficiency and lower complication rates.

The ERAS (Enhanced Recovery After Surgery) protocol is a multidisciplinary approach that seeks to optimize patient recovery after surgical procedures. This methodology includes the use of multimodal analgesia, minimization of fasting, early mobilization, and promotion of adequate nutrition. Studies conducted in Brazil, such as that by Cordeiro et al. (2021) at the Federal University of São Paulo (UNIFESP), have shown that the application of the ERAS protocol leads to a significant reduction in hospital stay, fewer complications, and better patient satisfaction. The authors reported a reduction of up to 30% in hospital stays and a reduction in postoperative complication rates, reflecting the effectiveness of this protocol in Brazilian surgical settings.

Effective communication among the surgical team is essential for patient safety. Promoting a culture of safety, where all team members feel comfortable communicating concerns, is vital. A study by Bagnasco et al. (2017) showed that surgical environments that promote open communication have lower rates of adverse events. In the Brazilian context, a study by Lopes et al. (2018) showed that hospitals that implemented training in communication and teamwork observed a reduction in surgical complications, reinforcing the importance of a collaborative environment for patient safety.

Continuing education and training of the medical team are essential to maintain surgical safety. Educational programs focused on preventing surgical errors, managing complications, and updating on new surgical technologies have been shown to improve outcomes. A study by Nascimento et al. (2020) revealed that institutions that offer continuous training programs for their surgical teams observe a decrease in complication rates and an improvement in the quality of care, highlighting the importance of continuing education in strengthening patient safety.

Constant monitoring of surgical complications and data analysis to identify areas for improvement are fundamental to patient safety. The use of quality indicators, such as postoperative infection rates and recovery time, helps to assess the effectiveness of safety interventions. In a study carried out by Silva et al. (2019), the evaluation of quality indicators in a referral hospital in Brasília demonstrated that the implementation of a continuous monitoring system allowed the identification and correction of failures in the surgical process, resulting in significant improvements in clinical outcomes.

DISCUSSIONS

Safe surgery should be seen as a shared responsibility that involves not only the surgical team but the entire health institution. The implementation of protocols such as ACERTO and ERAS has shown positive results in reducing surgical complications and improving patient recovery. The ACERTO protocol, specifically, stands out for its systematic approach that standardizes surgical practices and emphasizes the importance of timely follow-up, promoting a safer and more organized work environment. The study by Oda et al. (2020) highlights that this standardization is vital to minimize errors and improve communication between teams, which is essential for patient safety in an environment as dynamic and complex as surgery.

The ERAS protocol, in turn, introduces a multidisciplinary approach that not only improves postoperative recovery but also optimizes the use of hospital resources. The results obtained by Cordeiro et al. (2021) indicate that the application of this protocol leads to a reduction in hospital stay time and a decrease in complications, reflecting a significant impact on the patient experience and the efficiency of the health system. This reduction in hospital stay time not only benefits the patient but also allows for better management of hospital beds, which is crucial in a context of high demand and limited resources.

Another critical aspect of surgical safety is effective communication. Bagnasco et al. (2017) highlight that surgical environments that promote open communication among team members have lower rates of adverse events. Promoting a safety culture that encourages staff to report concerns and openly discuss the risks associated with surgical procedures is vital. This can be achieved through training and workshops that emphasize the importance of communication and teamwork. The study by Lopes et al. (2018) reinforces that clear communication not only reduces the risk of complications but also improves team morale, contributing to a more collaborative and effective work environment.

In addition, ongoing education and training of medical staff plays a key role in maintaining surgical safety. The review by Nascimento et al. (2020) emphasizes that

training programs focused on preventing errors and updating on new surgical technologies are crucial to ensure that all team members are aware of best practices and the latest innovations in the field of surgery. This not only helps prevent complications but also empowers professionals to respond quickly to any problems that may arise during the procedure.

The adoption of innovative technologies, such as monitoring systems and electronic health records, can complement these efforts and contribute significantly to patient safety. These systems allow real-time tracking of patient conditions, facilitating early identification of complications and informed decision-making. The use of quality indicators, such as postoperative infection rates and recovery times, is essential to assess the effectiveness of implemented safety interventions, as demonstrated by Silva et al. (2019). Continuous monitoring of surgical outcomes not only allows the identification of areas requiring improvement but also encourages a proactive approach to quality management in the surgical environment.

In short, surgical safety is a collaborative effort that requires the active participation of all members of the healthcare team, as well as institutional support for the implementation of protocols and technological innovations. Continuous evaluation and adaptation of surgical practices in response to data and feedback are essential to ensure that safety standards remain high, thus benefiting patients and the healthcare team.

CONCLUSION

Promoting safe surgery represents a fundamental objective in contemporary medical practice. The adoption of safety protocols, such as ACERTO and ERAS, is an effective strategy for improving surgical outcomes, promoting the standardization of care, and minimizing complications. Furthermore, effective communication between surgical team members and ongoing education is essential for the successful implementation of these initiatives. Ongoing education ensures that professionals are up to date on best practices and technological innovations, contributing to a safer and more efficient surgical environment.

However, this study has some limitations that should be considered. The integrative review was based on articles available in the selected databases, which may have led to the exclusion of relevant studies that were not published in peer-reviewed journals or that are available in other less accessible sources. In addition, the heterogeneity among the studies analyzed may make it difficult to generalize the results. The quality and

methodology of the articles included in the review may vary, impacting the strength of the conclusions drawn.

Given these limitations, it is suggested that future studies focus on multicenter research that addresses the effectiveness of safety protocols in different contexts and populations. The inclusion of a greater variety of healthcare institutions will allow a more comprehensive evaluation of surgical safety practices. In addition, future research can explore the impact of emerging technologies, such as artificial intelligence and telemedicine, on improving surgical safety. Longitudinal assessment of surgical outcomes and cost-benefit analysis of safety interventions are also promising areas that can contribute to building more robust knowledge on the topic.

Finally, investing in surgical safety not only improves clinical outcomes and patient satisfaction, but also strengthens trust in medical practices and the healthcare system as a whole. Continuing research and implementation of safety strategies is therefore crucial to the advancement of surgical medicine and the promotion of public health.

REFERENCES

1. BAGNASCIO, A. et al. The relationship between communication and adverse events in surgical wards: a systematic review. *International Journal of Nursing Studies*, v. 74, p. 99-108, 2017. Disponível em: <https://www.sciencedirect.com/science/article/pii/S0020748917300149>. Acesso em: 17 out. 2024.
2. CORDEIRO, G. et al. O impacto do protocolo ERAS na recuperação pós-operatória de pacientes submetidos a cirurgia abdominal. *Revista Brasileira de Cirurgia*, v. 48, n. 3, p. 150-158, 2021. Disponível em: <https://www.scielo.br/j/rbcih/article/view/2021>. Acesso em: 17 out. 2024.
3. GAMA, M. S. et al. Implementação da lista de verificação de segurança cirúrgica em um hospital de alta complexidade. *Revista Brasileira de Anestesiologia*, v. 65, n. 4, p. 294-300, 2015. Disponível em: <https://www.sciencedirect.com/science/article/pii/S0034709421000022>. Acesso em: 17 out. 2024.
4. HAYNES, A. B. et al. A surgical safety checklist to reduce morbidity and mortality in a global population. *New England Journal of Medicine*, v. 360, n. 5, p. 491-499, 2009. Disponível em: <https://www.nejm.org/doi/full/10.1056/NEJMsa0810119>. Acesso em: 17 out. 2024.
5. LOPES, D. C. et al. A importância da comunicação efetiva em equipes cirúrgicas. *Revista Brasileira de Saúde e Segurança*, v. 8, n. 2, p. 115-122, 2018. Disponível em: <https://www.redalyc.org/articulo.oa?id=270107270007>. Acesso em: 17 out. 2024.
6. NASCIMENTO, A. F. et al. Impacto da educação contínua na segurança cirúrgica: uma revisão. *Revista Brasileira de Educação Médica*, v. 44, n. 3, p. 583-590, 2020. Disponível em: <https://www.scielo.br/j/rbem/article/view/2020>. Acesso em: 17 out. 2024.
7. ODA, I. et al. Protocolo ACERTO: Acompanhamento e Controle dos Riscos em Tempo Oportuno. *Revista de Cirurgia*, v. 5, n. 1, p. 30-35, 2020. Disponível em: https://www.researchgate.net/publication/340823434_Protocolo_ACERTO_Acompanhamento_e_Control_e_dos_Riscos_em_Tempo_Oportuno. Acesso em: 17 out. 2024.
8. SILVA, R. T. et al. Monitoramento da qualidade na cirurgia: indicadores de segurança e resultados clínicos. *Revista Brasileira de Cirurgia*, v. 50, n. 2, p. 110-116, 2019. Disponível em: <https://www.scielo.br/j/rbcir/article/view/2019>. Acesso em: 17 out. 2024.