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Implementation of surgical scheduling flowchart: impact in the management of care process

Implantação de um fluxograma de agendamento cirúrgico: impacto na gestão dos processos assistenciais

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ABSTRACT

This study aimed to implement a flowchart of surgical scheduling in a university hospital with review of critical steps and implementation of managerial improvements, aiming perioperative safety, focus on effective care to the user and increased surgical productivity. It is characterized by an experience report developed in 2017, based on action research, where the researcher intervened, along with the multidisciplinary team, in the scenario to promote improvement of the work process of a tertiary surgical unit in Fortaleza- CE with the consent of the Research Ethics Committee, protocol number 2,357,222. The current steps of elective scheduling guided the development of the research, favoring the structuring of a flowchart with impact on review of care and administrative routines, optimization of surgical productivity, improvement of the insertion of the institution within the health care network and user/family satisfaction.

Keywords: Surgery. Workflow. Hospital Administration.

RESUMO

Este estudo teve como objetivo implantar um fluxograma de agendamento cirúrgico em um hospital universitário com revisão de etapas críticas e implantação de melhorias gerenciais, objetivando segurança perioperatória, foco no atendimento efetivo ao usuário e aumento da produtividade cirúrgica. Caracteriza-se por um relato de experiência desenvolvido em 2017, baseada em pesquisa-ação, onde a pesquisadora interveio, juntamente com a equipe multidisciplinar, no cenário com o intuito de promover aprimoramento do processo de trabalho de uma unidade cirúrgica terciária em Fortaleza – CE, com anuência do Comitê de Ética em Pesquisa, número de protocolo

2.357.222. As etapas atuais de agendamento eletivo nortearam o desenvolvimento da pesquisa, favorecendo a estruturação de um fluxograma com impacto em revisão de rotinas assistenciais e administrativos, otimização de produtividade cirúrgica, melhoria de inserção da instituição dentro da rede de atenção à saúde e da satisfação dos usuários/ familiares.

Palavras-chave: Cirurgia. Fluxo de Trabalho. Administração Hospitalar.

Introduction

Defining a surgical agenda goes beyond identifying and listing people for surgery. It requires multisectoral planning to assess individual needs and ensure perioperative safety for users and the surgical team. This managerial vision of a map requires a review of work routines, nurse-administrator interactions, and the prospect of continuous improvement in perioperative processes, with the goal of benefiting society by reducing surgical waiting times and controlling healthcare risks.

However, problems related to the imbalance between institutional service capacity and growing demand in surgical outpatient clinics, limited number of hospital beds, inadequate supply of supplies and equipment, pathological complexity, mortality risks related to waiting lists require a review of work routines, control of wastage of specialized labor, identification of critical steps in perioperative planning to improve safety and reduce risks related to comorbidities and waiting lists.

This vision prevents errors associated with care and proposes the construction of a feasible elective map, based on the implementation of patient safety initiatives aimed at effective care practices with the implementation of barriers to minimize errors that can favor surgical optimization and improve care in the Unified Health System (SUS).

From a managerial point of view, the implementation of a surgical scheduling flowchart identifies tasks, transcribes them in a sequenced and organized manner, avoids disorientation in the performance of activities, systematizes activities to achieve goals and provides an opportunity to review institutional work routines that can have an impact on reducing risks and care errors associated with inadequate planning of elective appointments.

Structuring the safe stages of elective scheduling helps reduce cancellations for preventable reasons, such as failure to request orthotics and prosthetics. The search for error prevention in surgical scheduling is justified by the growing demand for people exposed to risks of care, the need for effective multidisciplinary training, and the balance between productivity, quality of care, and social responsibility.

The implementation of a health technology, called flowchart, makes it possible to model work processes, implement improvements, review established actions, analyze critical points, improve processes, and increase the quality and efficiency of the services provided (Silva; Novaretti, 2015). With these objectives in mind, we propose the structuring of a surgical flowchart for a university institution to minimize difficulties related to the elective card.

Non-compliant events related to failures in multiprofessional and intersectoral planning, harm to users related to waiting times, a cancellation rate of more than 18%, high costs with unresolved hospitalizations, and complaints from users related to delays in surgical care justify the study and the proposal to implement a more effective surgical flowchart for those involved in perioperative care in the search for safety of care, control of outpatient demand, optimization of productivity, and integration into the health care network.

Lack of definition of the surgical date in outpatient care, exposure to clinical risks related to waiting for the procedure, biomedical model for defining elective scheduling, awareness of the surgical macro-process, summons with an insufficient interval for multiprofessional planning and elective card follow-up reinforce the importance of implementing a surgical flowchart and the search for continuous improvement.

1 Methodology

The research diagnosis was carried out by means of a descriptive study, which allowed a detailed description of the activities carried out in the organization to solve the problem situation. The action research approach was appropriate because the researcher participated in the multi-professional construction of the proposed flowchart and was part of the organization's work, being able to collaborate in the analysis of critical points and in the suggested improvements.

This type of research is characterized by flexibility, since the researcher does not know in advance the path to be taken during the investigation. It is an adaptable method because it helps the researcher to deal with the insertion of knowledge into practice and requires the full involvement of the researcher in trying to change the organization with active and future-oriented participation, facilitating solutions aimed at a desired future for those involved.

The hospital participating in this study is a university unit whose mission is care, research and teaching. It performs an average of 400 medium and high complexity surgeries, classified as elective, urgent and emergency. Nineteen medical specialties are divided into morning and afternoon shifts from Monday to Friday to follow the elective schedule. Emergencies, urgencies and transplants are performed according to user demand and the organization of the surgical service.

This segment of the agenda identified opportunities for improvement in terms of length of stay and review of specific needs to ensure safe care. Residents and surgeons summoned users according to pathology, training and waiting time in queues, imposing on the institution a care practice that sometimes had a multidisciplinary planning gap.

The technique of discussion circles on the scenario studied and the planning of continuous improvement with the implementation of the elective scheduling flowchart were essential to the construction of this health technology. The participants in the process were hospital managers, researchers and multidisciplinary actors in the surgical process, in search of a more effective collective construction regarding the management of perioperative care.

Reviews of hospital routines helped to understand the steps involved in rework and the loss of added value in the care process. Multidisciplinary activities were recorded in study panels, meetings with minutes, the design of a strategic surgical process scheme with interactive construction by all those involved in perioperative care and shared decision-making.

Administrative and nursing measures were taken, in agreement with hospital managers and the multidisciplinary team involved in the research, to facilitate the revision of the scheduling process and implement the proposed surgical flowchart, defining intersectoral safety measures to minimize nursing risks, suspensions related to institutional planning and increase surgical productivity.

Several problems related to the map were listed as a way to optimize the solution and plan improvements related to the scheduling process. Of these, three were most evident: an archaic surgical scheduling process, a previously analyzed schedule that was changed without communicating it to the unit, and rework related to the institution's inadequate management of the elective schedule.

These three observations, made by a group of professionals involved in the perioperative care process, justified the need to build a more effective scheduling flowchart, focused on user needs and administratively more viable for perioperative safety. Various interactions of interdepartmental processes and management adjustments resulted in a surgical scheduling flowchart developed in software called Bizagi®.

Validation was carried out with authors related to surgical care, adjusting continuously improve perioperative safety and multidisciplinary analysis of a line of care for surgical users at the institution, providing an opportunity to broaden the vision of the care macro-process.

2 Results and discussion

By analyzing the critical stages and difficulties associated with the elective scheduling model, a surgical scheduling flowchart was developed. Access to preoperative outpatient care begins with referrals from primary care units to state and municipal health departments to assess individual needs for tertiary surgical care.

This care network strategy provides order and allows for comprehensive care, but bottlenecks that reduce the effectiveness of care, for example, must be taken into account. Access to specialized services, the scope and organization of services, and the degree of resolution of primary care need to be carefully analyzed to facilitate access to health services, such as timely appointment and therapeutic procedures for the most vulnerable patients.

This analysis is justified by the growing demand for outpatient surgical specialties. Factors such as pathological complexity, increased life expectancy, inadequate management of secondary/primary referrals and comorbidities have an impact on increased waiting times for the procedure, risks of care and overburdening of the multidisciplinary team.

This scenario presents opportunities for improvement and justifies a review of workflows to implement a more effective surgical schedule with a focus on queue management, reducing user care risks, prioritizing acuity, and assessing institutional care capacity. Aligning these factors with systematic surgical scheduling promotes safety of care and management of users' perioperative care processes.

Clinical assessment, laboratory and radiological investigations, and pre-anesthesia consultations are the critical stages for formal surgical indication and initiation of an elective scheduling plan. The results of this study were presented by making comparisons between the previous scheduling model and after implementing the proposed surgical scheduling flowchart, confirming the importance of perioperative safety and queue management as an institutional strategy for continuous improvement and user/family satisfaction.

2.1 Queue Management by Specialty

Surgical demand control was performed exclusively by surgeons and/or residents. Records of people ready for surgery were managed in notebooks, Excel spreadsheets and/or on forms. This variation in control created risks of ineffective communication between specialists and users, facilitated management and support errors, and exposed the multidisciplinary team, the institution, and the user to damages related to inadequate planning of elective surgeries.

The identification of opportunities for improvement in the scenario described, the difficulties related to queue management and multidisciplinary interactions in surgical care justified a review of care processes and the involvement of the institution as co-responsible for planning the elective agenda. The challenge was to understand outpatient demand, carefully manage queues by specialty, review activities related to elective scheduling, and implement perioperative safety measures to benefit users and quality of care.

An administrative measure was the implementation of a sector called Internal Regulation Nucleus (NIR in Portuguese), whose purpose is to work on bed management at the hospital level in a centralized manner and serve as an interface between the Health Units and the corresponding Regulation Centers, in an integrated and agreed manner, with the aim of optimizing the use of hospital beds, contributing to the reduction of waiting times for hospitalization, evaluating results and seeking continuous improvement EBSERH INTERNET, allowing the implementation of continuous improvements.

The location of the map construction has moved from the surgical center to the regulatory unit, as planning depends on elective bed management and other factors such as average surgical stay, occupancy rate, turnover rate, and others. Care routines have changed in the institution. Intersectoral interactions with related units such as the Materials and Sterilization Center, Surgical Admissions, the ICU, and the pharmacy have been aligned to meet specific needs and the vision of integrated care.

This change was incorporated into the proposed surgical scheduling flowchart, with implications for bed management, community access, and improvements in critical stages of the care process. Strategically, the validation of waiting lists, the revision of the pre-anesthesia consultation scheduling flow, and administrative adjustments were made in search of safety, quality, and increased surgical productivity.

All these actions were planned to reduce the harm to users, to identify the factors that favor elective cancellations and to propose measures to minimize their occurrence, considering that effective communication between health professionals and users, for example, in the scheduling of surgery, can minimize absenteeism (6), which has an impact on institutional costs and user satisfaction.

Reducing the cancellation rate, optimizing the use of operating rooms, improving perioperative safety, minimizing harm to those exposed to pathological complications were the objectives of these interventions and, as a vision for the future, it is planned that all users will be informed of the date of surgical planning and will be summoned by the institution with pre-checks to validate the procedure, individualize care and optimize in-service training.

2.2 Deadline for Submission of Surgical Notes

Surgical notices were completed by residents up to twenty-four hours before the procedure and after discussing clinical cases with preceptors. The administrative document was delivered to the surgical center after users were admitted to the hospital. This immediacy had an impact on multidisciplinary planning, availability of supplies and equipment, surgical beds, service organization, effective user care, and the high cancellation rate.

It is believed that the need for surgery is stressful for the patient and that the high rate of suspensions is related to the financial impact and discrediting the quality of the institution's processes. The limitations are more evident in public university hospitals, with the scrapping of their physical structure and equipment, delays in the procurement of materials, high demand for urgent and emergency procedures, lack of ICU beds, multiple difficulties.

For this reason, it was imperative to increase the time frame for scheduling elective appointments, since the interval of up to twenty-four hours did not guarantee security for forecasting, material provision and multisectoral surgical planning. People were exposed to the risk of not being admitted to the hospital even after being summoned by a doctor with their name on a card. This situation caused dissatisfaction among users and their families, increased the risk of pathological deterioration and led to higher hospital costs.

For these reasons, multidisciplinary meetings were held to evaluate the surgical plan, and it was necessary to recognize that communication between managers, workers and users, to build collective processes to confront power and labor relations, often generates dehumanizing attitudes and practices that inhibit the autonomy and co-responsibility of health professionals in their work and users in their self-care.

Multidisciplinary decisions determined that increasing the time interval for sending surgical notifications from twenty-four to forty-eight hours could improve perioperative safety, reduce the rate of cancellations due to no-shows, facilitate communication between users and institutions, and facilitate intersectoral planning. The biomedical model is undergoing a transition in which the organization of surgical procedures is a multidisciplinary and intersectoral responsibility, favoring the user and the medical team.

In the flowchart created communication for hospitalization is now greater, benefiting organizational processes, interdepartmental planning, and patient surgical access. In practice, this change in the time it takes to call and notify patients has reduced the possibility of harm, improved communication between professionals, and increased surgical productivity.

As a medium-term vision, we intend to plan the surgical schedule for one week to carry out medium-term programming, taking into account the assessment of waiting lists, pathological severity, outpatient demand, multiprofessional training and social surgical needs.

2.3 Perioperative safety controls

The complexity of the interactions between surgical services justifies the importance of multiple controls to prevent harm related to perioperative care and reduce elective cancellations. Care is becoming more complex and dangerous. Multiprofessional efforts must be focused on promoting measures to reduce risk and mitigate adverse events.

Regarding perioperative care, risks can be prevented by rigorously reviewing items that are essential to user safety. Based on this, the proposed surgical planning flowchart is defined as a prerequisite for multisectoral reviews to safely plan the care provided. The alerts received are critically evaluated by an interdisciplinary team to provide supplies, equipment and instruments or, if necessary, to block the procedure if critical steps are not resolved.

This multidisciplinary work ensures the quality of surgical care and the safety of the team and the user. The surgical center pharmacist evaluates the notification document to manage specific needs related to the procedure and assess the availability of requested supplies. Physician-pharmacist interaction takes place to clarify any doubts, as well as interaction with the prior audit to evaluate the standardization of the use of materials previously agreed with the surgeons.

Any indication of non-compliance, shortage or insufficiency of essential supplies and/or medications for the procedure is communicated to the medical team for a joint decision on whether to maintain or suspend the procedure. This example demonstrates the interdisciplinary maturity of elective agenda planning and the institutional interest in improving the quality of services provided to society, which is exposed to increasing risks in waiting lists.

This approach to preventing errors in elective scheduling extends to the Materials and Sterilization Center (CME), which implements measures to anticipate and provide instruments and/or specific needs for surgery. A lengthy procurement process, pent-up demand, under sizing of some instruments and the specific needs of some surgeries reinforce the importance of this control activity, which has implications in terms of reducing suspensions and proactive care.

Final considerations

The need to review work processes related to surgical planning led to the realization that continuous improvement in surgical safety involves a complex macro process, from the preoperative outpatient clinic to hospital discharge. Therefore, management decisions related to the construction of an effective surgical schedule had to be carefully discussed in a multidisciplinary team to benefit society.

From this perspective, the implementation of a surgical scheduling flowchart allowed the organization of critical stages for the construction of an elective map, thus facilitating users' access to secondary/tertiary care, systematizing intersectoral work routines, stimulating interdisciplinary communication with a proactive vision, and also requiring the institution's active participation in surgical outcomes.

The review of the planning model warned of the need to know the surgical demand of the hospital, reinforcing that the map should be linked to management assessments such as waiting lists for specialties, priority/pathological severity ratio, outpatient service, multidisciplinary training, institutional goals and planning for the future optimization of surgical care, focusing on safety and quality of surgical services.

From this perspective, the goal was to prevent harm to those exposed to waiting lines. Adverse events such as surgical suspensions for preventable reasons, scheduling errors, immediate surgical communication to the user, underutilization of specialized manpower and operating room time were studied and analyzed with the aim of implementing preventive measures favoring competent perioperative care and improving surgical card planning.

These multidisciplinary measures were essential to implement safety barriers and optimize surgical productivity with a focus on access to care and quality of care. The implementation of the Surgical Scheduling Flowchart resulted in inter-sectoral integration, a review of institutional capacity, the organization of work processes, a reduction in waste and rework, and the planning of actions to improve surgical access for the population.

This institutional maturation has demonstrated the need for continuous process evaluation to ensure competent care. Multidisciplinary decisions also have an impact on safety, social benefits, and institutional costs. Linking pre-anesthesia consultations to elective scheduling is a safety barrier that improves user preparation and reduces the risk of cancellations due to clinical instability.

For example, computerization of preoperative outpatient clinics helps to understand surgical demand and allows for acuity ranking. It also ensures up-to-date registration, inter-sectoral communication, procedural specificity and transparency of the waiting list. This study enabled the start of this institutional planning, recognizing the importance of effective communication and management of surgical patient waiting lists for the availability of surgical access.

This study reinforces the complexity of surgical card planning. Implementation of the proposed scheduling flowchart facilitated surgical execution and implemented safety barriers essential to perioperative care management. Multidisciplinary evaluations and decisions allowed progress in building a more effective surgical map for users, with an emphasis on perioperative safety, reflected in systematized processes and a reduction in the rate of elective hospital cancellations compared to previous years.

It is hoped that this research will guarantee the quality of surgical services through better planned work processes, and that it will also guide other studies in the search for effective and competent care in the surgical health units of the Unified Health System, in search of a focus on care with reduced risks and high hospital performance.

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