Cogitare Enfermagem

ORIGINAL ARTICLE

QUALITY INDICATORS AT A SURGICAL CENTER SPECIALIZED IN DERMATOLOGY*

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ABSTRACT

Objective: to identify and characterize the most frequent quality indicators used at a public surgical center specialized in dermatology.

Methods: cross-sectional study in which a survey consisting of daily records of the most frequent quality indicators among the 20 existing at the unit was carried out between August 2015 and July 2016. Mean, median minimum and maximum values, standard deviations, and absolute and percentage frequencies were obtained. A p-value lower than 0.05 (p<0.05) was considered as the level of significance.

Results: in a total of 595 elective surgeries, outpatient (87.9%), dermatologic (81.3%), and those performed in men (52.6%) with an average age of 54.9 years stood out. The five most frequent indicators were: cancelled surgeries (17.6%), incomplete nursing records (14%), absenteeism (6.5%), infection in surgical sites in clean surgeries (2.7%), and occupational accidents (2.2%).

Conclusions: identifying and characterizing quality indicators give visibility to local processes and enable decision-making and improvement of the offered services.

DESCRIPTORS: Quality Indicators, Health Care; Practice Management; Surgicenters; Quality Management; Perioperative Nursing.

HOW TO REFERENCE THIS ARTICLE:
Amaral JAB, Spiri WC, MA de, Guimarães HCQCP, Lima SAM. Quality indicators at a surgical center specialized in dermatology. Cogitare enferm. [Internet]. 2020 [accessed "insert day, monh and year"]; 25. Available from: http://dx.doi.org/10.5380/ce.v25i0.70391.

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ARTIGO ORIGINAL / ARTÍCULO ORIGINAL

INDICADORES DE QUALIDADE EM CENTRO CIRÚRGICO ESPECIALIZADO EM DERMATOLOGIA

RESUMO

Objetivo: identificar e caracterizar os indicadores de qualidade mais frequentes utilizados em um Centro Cirúrgico público especializado em dermatologia.

Método: estudo transversal seccional, pelo qual fez-se um levantamento, com registros diários, dos mais frequentes indicadores entre os 20 existentes na unidade, no período de agosto de 2015 a julho de 2016. Considerou-se: médias, medianas, valores mínimos/máximos, desvios padrões, frequências simples e percentuais. O valor de p<0,05 foi considerado como nível de significância.

Resultados: das 595 cirurgias eletivas, destacaram-se as ambulatoriais (87,9%), as dermatológicas (81,3%), em pacientes do sexo masculino (52,6%), com média de 54,9 anos. Os cinco indicadores mais frequentes foram: cirurgias suspensas (17,6%); registros de enfermagem incompletos (14%); absenteísmo (6,5%); infecção em sítio cirúrgico em cirurgias limpas (2,7%) e acidentes de trabalho (2,2%).

Conclusões: a identificação e a caracterização dos indicadores de qualidade proporcionaram visibilidade aos processos locais, viabilizando a tomada de decisões e o aperfeiçoamento dos serviços prestados.

DESCRITORES: Indicadores de Qualidade em Assistência à Saúde; Gerenciamento da Prática Profissional; Centros Cirúrgicos; Gestão da Qualidade; Enfermagem Perioperatória.

INDICADORES DE CALIDAD EN CENTRO QUIRÚRGICO ESPECIALIZADO EN DERMATOLOGÍA

RESUMEN:

Objetivo: Identificar y caracterizar los indicadores de calidad más frecuentemente utilizados en un centro quirúrgico público especializado en dermatología.

Método: Estudio transversal seccional, requiriendo relevamiento, con registros diarios de los indicadores más frecuentes entre los 20 existentes en la unidad, de agosto de 2015 a julio de 2016. Se consideraron: promedios, medianas, valores mínimos/máximos, desvíos estándar, frecuencias simples y porcentuales. Nivel de significancia establecido en p<0,05.

Resultados: De 595 cirugías electivas, se destacaron las ambulatorias (87,9%), las dermatológicas (81,3%), en pacientes masculinos (52,6%) con promedio de 54,9 años. Los cinco indicadores más frecuentes fueron: cirugías suspendidas (17,6%); registros de enfermería incompletos (14%); ausentismo (6,5%), infección en sitio quirúrgico en cirugías limpias (2,7%) y accidentes laborales (2,2%).

Conclusiones: La identificación y caracterización de indicadores de calidad otorgó visibilidad a los procesos locales, haciendo posible la toma de decisiones y el mejoramiento de los servicios brindados.

DESCRIPTORES: Indicadores de Calidad de la Atención de Salud; Gestión de la Práctica Profesional; Centros Quirúrgicos; Gestión de la Calidad; Enfermería Perioperatoria.

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INTRODUCTION

Health institutions have faced several challenges to offer high-quality services to patients and their relatives[1]. This scenario requires systematic evaluations of health processes seeking to identify the factors that directly influence the work of professionals involved in care delivery[2]. Institutions have instrumentalized themselves and adopted methods to evaluate their services. These methods are based on quality indicators, which expose processes, identify weaknesses and potentialities, and allow to provide users with more adequate care, aiming to improve its results[2,3].

Donabedian developed a quality evaluation model that has become a standard in the health services sphere[4]. It is based on three essential components: structure, process, and results. In this context, quality indicators are used to understand situations and analyze tendencies or changes that emerged over time, making them quantifiable, so they can be examined and, consequently, offer the possibility of understanding the work process and evaluating whether the goals are being reached, proving resources to improve services[3].

When data and results related to quality indicators are properly treated, they become instruments of strength and power to change internal work processes. However, selection of indicators for the evaluation process must take into account healthcare, educational, and management policies existing in this context; the organizational mission and structure; the institutions' programs and work proposals; the available human, material, financial, and physical resources; and the expectations of the users to whom services are delivered[5].

Processes related to care management are strongly present in the nursing practice. Because of the role nurses play in health teams, they take over the management of indicators in steps that range from implementation to analysis. Consequently, it is indispensable that they know planning, management, and organization tools that allow to assess the performance and quality of the services they provide and identify opportunities to improve their results[3].

However, mastering the applicability of these indicators is still new and challenging and demands a comprehensive understanding of the processes from managers. Taking into account the benefits emphasized in the use of quality indicators in the health area and the reduced number of studies on the subject in the literature, the authors recognized the need to analyze the context of a surgical center specialized in dermatology. Because of the specificities of the place and the need to give visibility to the processes, the authors envisaged the transformation of data that was merely numeric into information that could allow to optimize the activity of managers and encourage attitudes compatible with the improvement of the quality of the provided services and of the processes by which care is delivered in the team members.

The present study had the objective of identifying and characterizing the most frequent quality indicators used at a public surgical center specialized in dermatology.

METHOD

This was a cross-sectional study carried out at the surgical center of a tertiary public hospital specialized in dermatology located in the interior of São Paulo state, Brazil, linked to the State Health Secretariat and the Ministry of Health.

There were two operating theaters in this hospital, intended for elective minor and medium surgeries, carried out on week days (Monday to Friday), from 7 am to 7:15 pm involving the specialties dermatology, ophthalmology, and orthopedics. Dermatologic

surgeries were performed in patients with skin neoplasias, such as melanomas, basal cell carcinomas (BCC), and squamous cell carcinomas (SCC), among others. Most ophthalmologic and orthopedic surgeries were carried out to correct deformities caused by leprosy.

The nursing team was 19 professionals: one chief nurse, two licensed practical nurses, and 16 nursing aides, all of them hired on a statutory regimen with 30 working hours per week.

Data were recorded by the main researcher daily from August 2015 to July 2016, except for the nursing team's absenteeism rate, the surgical site infection (SSI) rate in clean surgeries, and the rate of occupational accidents involving nursing professionals, which were recorded on the first of the subsequent month. Over one year, prospective data collection contributed to keeping track of information, which reduced the chances of underreporting.

There were 20 quality indicators used in the operating theater: medication error incidence; unplanned extubation incidence; skin lesion incidence; medication administration-related error incidence; fall incidence; complications resulting from the use of electrosurgery; complication rate in the post-anesthesia recovery room; anesthesia-related complication rate; rate of patients with surgical antimicrobial prophylaxis; rate of patients whose surgery was preceded by area preparation; rate of loss or misdirection of surgical supplies; nursing absenteeism rate; rate of occupational accidents involving nursing professionals; rate of cancelled surgeries; SSI rate in clean surgeries; surgical death rate; rate of incomplete nursing records in the perioperative period; perioperative nursing care systematization rate; preoperative nursing visiting (PONV) rate; and occupancy rate.

Originally, the unit data were inserted into Microsoft Excel spreadsheets on a computer available at the unit. These spreadsheets contained daily records and the absolute totalization of the indicators.

To standardize the records and characterize the quality indicators, it was necessary to adapt the existing instrument. For the present study, the researchers used the formulas on the software, by taking the number of events, dividing it by the number of individuals that could originate a certain event, and multiplying the result by powers of 10 to obtain the indicator rate.

In addition to the rates above, characteristics specific to each indicator were included, with details about the information. For example: a) causes of surgery cancellation (nonattendance; lack of clinical conditions; reasons related to the physician; patient withdrawal; lesion healing/disappearance; scheduling error; lack of materials or equipment; change of conduct; execution of the procedure at another facility; lack of fasting or preparation; transfer to another institution; absence of accompanying person; and death before the procedure date); b) SSI specificities in clean surgeries (comorbidities; signs and symptoms; medications used in prevention or treatment; and surgery time of clean surgeries with infections); c) occupational accidents (biological, physical, and chemical accidents); d) taking into account the absences to calculate absenteeism according to the statutory hiring regimen (absence with permission – programmed and nonprogrammed; justified and unjustified absence; absence for medical reasons; compassionate leave; sick leave; part-time sick leave; blood donation; and sick leave for a relative); and e) parameters to be considered as incomplete nursing records[6].

Spreadsheets were inserted into the instrument to record sociodemographic data about patients (age and gender) and surgeries (surgery specialties and service modality – inpatient or outpatient).

After data examination, the indicators that showed the highest frequencies were selected. Statistical analysis included calculation of means, medians, minimum and maximum values, standard deviations (SD), and simple and percentage frequencies. A p-value lower than 0.05 ($p < 0.05$) was considered as the level of significance, and the software used to run analyses was Statistical Analysis Software for Windows version 9.3.

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The proposal was approved on August 3, 2015 by the Research Ethics Committee at the Botucatu Medical School under report no. 1,168,387.

RESULTS

In a total of 595 elective surgeries, 523 (87.9%) were outpatient and 72 (12.1%) were inpatient surgeries. Dermatologic surgeries prevailed (n=484; 81.3%), followed by orthopedic (n=79; 13.3%) and ophthalmologic (n=32; 5.4%) ones.

There were 282 (47.4%) surgeries performed in women and 313 (52.6%) in men. Patient age ranged from one year and six months to 104 years, with an average age of 59.4 ± 18.0 years and a median of 62 years.

The five most frequent quality indicators found in the present study are shown in Table 1.

Table 1 – Average values obtained for quality indicators at a surgical center. Bauru, SP, Brazil, 2016

Months	Rates (%)				
	Cancelled surgeries	Surgical site infection in clean surgeries	Occupational accidents	Incomplete records	Absenteeism
Aug/2015	24.7	0	0	13.4	2.5
Sep/2015	17.4	3.5	10.5	22.5	2.5
Oct/2015	16.7	4.7	0	8.6	5
Nov-15	25.9	12.4	10	10	7.5
Dec/2015	16.7	0	0	16	6.9
Jan-16	15.6	5.3	0	7.4	2.5
Feb/2016	16.3	3.9	5.3	30.6	3.9
Mar-16	18.2	0	0	6.7	9
Apr/2016	12.1	5	0	13.8	3.3
May/2016	7.8	0	0	11.9	4.6
Jun-16	16.1	3.3	0	15.4	4.2
Jul-16	16.7	14.3	0	12	26.4
Average±SD	17.0 ± 4.8	4.4 ± 4.7	2.2 ± 4.1	14 ± 6.8	6.5 ± 6.6

Over the study period, 722 surgeries were scheduled, of which 127 were cancelled, which originated a cancellation rate of 17.6%, with an average of 17% ± 4.8% and a median of 16.7%. Among these cancellations, 54 (42.5%) occurred for surgeries whose patients were men, and 54 (42.5%) for procedures that would be carried out in women, with a difference for this variable (p=0.02). The average age was 57.1 ± 20.1 years, with a median of 58

years. The specialty that showed the highest number of cancellations was dermatology, with 96 (75.6%) cases, followed by orthopedics (n=23; 18.1%) and ophthalmology (n=8; 6.3%), with a difference between these specialties expressed as p<0.00. The causes for surgery cancellation are listed in Table 2.

Table 2 – Causes for surgery cancellation (n=127). Bauru, SP, Brazil, 2016

Causes for cancellation	n	%
Nonattendance	35	27.6
Lack of clinical conditions	25	19.7
Reasons related to the physician	23	18
Patient withdrawal	10	7.9
Lesion healing/disappearance	8	6.3
Scheduling error	8	6.3
Lack of materials or equipment	5	3.9
Change of conduct	5	3.9
Execution of the procedure at another facility	3	2.4
Lack of fasting or preparation	2	1.6
Transfer to another institution	1	0.8
Absence of an accompanying person	1	0.8
Death before the procedure date	1	0.8
Total	127	100

Among the 595 surgeries, 521 were classified as clean (427 dermatologic, 52 orthopedic, and 42 ophthalmologic surgeries). In this subgroup, 14 patients showed SSI, which corresponded to an infection rate of 2.7%.

The infection rate recorded for dermatologic surgeries was 3%, with a monthly average of 3.5% ± 4% and a median of 3.4%. In the orthopedics specialty, the rate of infection was 1.9%, with an average of 0.8% ± 2.9%, and no infection episodes were observed in ophthalmologic surgeries. Data about the surgeries that showed SSI and the patients involved in them are gathered in Table 3.

Table 3 – Distribution of patients who were operated at the analyzed surgical center and had surgical site infection, according to variables (n=14). Bauru, SP, Brazil, 2016 (continues)

Variables	n	%	Average ± SD	Median
Gender				

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Female	10	71.4		
Male	4	28.6		
Age (years)				
			65.6 ± 17.1	71.5
Comorbidities				
Presence	7	50		
Absence	7	50		
Signs and symptoms				
Purulent discharge	5	35.7		
Erythema	4	28.6		
Inflammation signs	3	21.4		
Wound dehiscence	2	14.3		
Medications – treatment				
Cefalexin	11	78.7		
Azithromycin	1	7.1		
Clindamycin	1	7.1		
Topical medication	1	7.1		
Surgical time (minutes)				
< 60	4	28.6		
60 to 120	10	71.4		

Over the study period, there were five occupational accidents involving nursing team members, and all of them were related to the presence of biological material in sharps. Four (80%) occurred with nursing aides and one (20%) with a nurse. All these professionals were women and had an average age of 47.4 years.

The indicator incomplete nursing records showed that this event's rate was 13.9% for the 595 evaluated patient records, with an average of 14%. It must be emphasized that no patient records containing total absence of information provided by the nursing team were found.

Regarding the absenteeism indicator, 145 days of absence from work were recorded, of which 116 were considered nonpredicted absence days and 29 as predicted absence days. Out of the total number of missed days, 50 occurred in 2015 and 95 in 2016, which totaled 1,056 hours of absence from work, which distributed as 900 hours for nursing aides and 156 hours for nurses.

Absenteeism rates at the examined unit showed an average of 3.9% ± 1.9% and a median of 3.8% among nursing aides, and an average of 0.9% ± 0.9% and a median of 1.2% among nurses. The total absenteeism rate obtained by summing the numbers of both professional categories was 6.5%. Table 4 shows data about absenteeism at the surgical center according to types of absences.

Table 4 – Types of absences that caused absenteeism at the examined surgical center. Bauru, SP, Brazil, 2016

Types of absences	Nursing aides		Nurses		Total	
	Hours	%	Hours	%	Hours	%
Absence with permission (programmed)	258	28.7	6	3.9	264	25
Absence with permission (nonprogrammed)	348	38.7	24	15.4	372	35.2
Justified absence	30	3.3	0	0	30	2.8
Unjustified absence	0	0	0	0	0	0
Absence for medical reasons	60	6.7	12	7.7	72	6.8
Compassionate leave	48	5.3	0	0	48	4.6
Sick leave	132	14.7	108	69.2	240	22.7
Part-time sick leave	0	0	6	3.8	6	0.6
Blood donation	6	0.6	0	0	6	0.6
Sick leave for a relative	18	2	0	0	18	1.7
Total	900	100	156	100	1056	100

DISCUSSION

Data about the surgeries carried out at the unit indicated that the outpatient modality was the most common, probably because of the advantages it offers in comparison with inpatient surgeries. The former allows to guarantee patient safety better, has a shorter waiting time, causes fewer and less intense changes in patients' lives, has a more comfortable recovery period, involves lower costs and higher budget efficiency, and shows lower complication incidence[7,8].

Cases of BCC and SCC, whose morbidity rates are an important public health problem, were the main reasons for dermatologic surgeries to surpass procedures from other specialties offered at the unit. Prevention and early diagnosis, in addition to knowledge of the disease risk factors, are fundamental for reducing these rates[9].

Most of the orthopedic and ophthalmologic surgeries were performed to correct deformities caused by leprosy, a disease with a high number of cases and high disabling potential[10].

The findings related to patients' gender indicated that there was no significant difference between men and women regarding the examined procedures, although a higher number of the former was observed, which contradicts a previous study carried out at the same institution that identified a higher incidence of BCC in women[9], with likely indication for surgery.

Patients older than 60 years were the most affected by neoplasias that suggested the need for surgery, a result that corroborates the analyzed literature[9]. Despite this evidence, an increase in the number of cases of neoplasia in younger people was observed, which can be partially explained by the tanned skin culture and more time available for leisure activities[9].

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Regarding the indicator cancelled surgeries, the rate found was similar to that obtained in a study carried out at a Brazilian teaching hospital (16.1%)(11), but higher than the rates recorded at a public hospital in the Brazilian state of São Paulo (6.7%)[12]. A literature review on surgery cancellation showed that the cancellation rate ranged from 0.48% to 38% in the selected studies, which emphasized the marked variability of this rate worldwide[13].

The average age of the patients who had their surgical procedures cancelled may be related to the fact that most of the procedures were carried out in patients from that age group. A study that used secondary data extracted from the database of a public hospital in the state of São Paulo, Brazil, pointed out the predominance of cancellations in patients with more extreme ages (children and elderly people)[12].

The present study found differences in surgery cancellation rates between the three specialties existing at the unit. It was inferred that rates were higher in dermatology because there was a prevalence of this area in the procedures carried out.

Nonattendance of patients stood out among the reasons that led to surgery cancellation, which corroborates the literature[14]. Other studies have pointed out patients' unfavorable clinical conditions as the main cause for surgery cancellation[12,13].

Some researchers in the field stressed the need to intensify the discussion on cancellation of elective procedures for considering that these surgeries are avoidable and can be minimized when strategies to improve quality are adopted by institutions. Among these strategies, PONV and preoperative follow-up stand out, aiming to stabilize patients' clinical condition[14]. Therefore, it can be deduced that improving communication between patients and hospitals can facilitate scheduling dynamics, contributing to avoiding cancellations[15].

The SSI rate in clean surgeries was considered small when compared to the result found in a more relevant study carried out in Brazil by the Ministry of Health in 1999[16].

Hospital-acquired infections affect both developed and developing countries and directly influence quality indicators of hospitals and prognoses of patients, in addition to being associated with higher costs for institutions and increasing hospital stay length[17].

The Centers for Disease Control and Prevention propose guidelines and recommendations based on evidence for SSI prevention that must be incorporated into programs, focusing on patient safety[18], aiming to improve surgical quality. The literature points out the need to adopt measures to guarantee patient safety, taking into account SSI prevention and safe surgery checklist application, to improve the quality of the practices, investing in the development of an organizational safety culture based on planning, strategies, and evaluation.

Around 87.3% of the nursing contingent in Brazil is made up of women[20]. Consequently, this population is more exposed to accidents during the execution of their functions. The present study gathered data that confirmed this information, since all occupational accidents occurred with women, who were the majority of the workers in the setting of the present study. Nursing aides (the predominant category at the examined hospital) stood out in the occupational accident records, a result that is corroborated by other studies on the subject[20,21].

Still regarding occupational accidents, all the cases involved contact with biological material caused by handling of sharps, which confirmed the finding of a study that reported that 53.8% of the analyzed professionals were victims of this type of accident[21].

The indicator incomplete record rate considered the records carried out by the nursing team only, in accordance with the adopted reference frame[6]. This allowed to bring up information that had been little emphasized by the team and promote important changes in the work routine after professional training and awareness raising.

The quality of the records on the service offered to patients is a growing concern in institutions, because it is considered that insufficient information affects and hinders achieving care quality, especially when it is related to patient identification data. When this type of data is incomplete, patient safety is compromised[22].

The indicator nursing absenteeism showed rates lower than those reported for other Brazilian contexts[23,24]. The literature points out the multifactorial nature of absenteeism as responsible for the increase in its complexity. This problem affects public and private institutions similarly, which stresses the need for organizations to invest in absence control programs[23].

Similarly to what is reported in the literature, the higher prevalence of absences was unpredicted ones, among nursing aides[25], and absences with permission stood out. These data suggested that the lower the hierarchical level occupied by nursing workers, the higher the chances of absences to occur[23].

Absenteeism affects the delivery of essential services and burdens public coffers because of service interruption or the expenses to rehabilitate the employee. This problem calls for the need to adopt strategies of prevention and rehabilitation in occupational health policies oriented toward civil servants[26].

It must be stressed that measuring indicators is an important step in the responsibility of promoting quality improvement in the surgical center setting[27].

The limitation of the present study was having been carried out at a single specialized place, which prevents generalization of some results to other realities. However, its purpose was to know the context of that unit and point to aspects that allowed to improve the quality of care provided to users.

CONCLUSION

Identifying and characterizing the five most frequent quality indicators at the surgical center gave visibility to work care and management processes, bringing up specific characteristics that were unknown to the team.

Reflecting on the work process, based on valid and proper information, was a way to obtain better results, because it provided resources for decision-making, encouraging professionals to better understand the context in which they are inserted and, consequently, improve the services they offer.

The authors believe that the present study can contribute to the nursing field because it demonstrated the importance of using quality indicators in professional practice and may encourage professionals to record data and, most importantly, analyze them, since interpreting information can expose work processes in health and, consequently, lead to their improvement. This can help implement quality programs and search for processes that certify the excellence of the work carried out.

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