



**SURGICAL SUSPENSION: THE ANGLE OF A STATISTICAL PROBLEM WITH  
HUMAN REPERCUSSIONS**  
**SUSPENSÃO CIRÚRGICA: O ÂNGULO ESTATÍSTICO DE UM PROBLEMA DE REPERCUSSÕES  
HUMANAS**  
**SUSPENSION QUIRÚRGICA: EL ÁNGULO ESTADÍSTICO DE UN PROBLEMA DEL REPERCUSIONES  
HUMANOS**

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**ABSTRACT**

**Objective:** to evaluate the rates and the motives for the suspension of surgeries. **Method:** a quantitative, descriptive study was conducted in a Surgical Center of a Hospital School in Parana/PR, Brazil. The data were collected from productivity reports noting the reasons for suspension, the clinics responsible and the date of the procedure's suspension; afterwards, they were tabulated and analyzed by descriptive statistics, with percentages and distribution of absolute frequencies. This research had been approved by the Ethics Committee in Research, CAAE 0.0.268.000-10. **Results:** there were 13,813 surgeries scheduled, of these, 17% were suspended. The highest rates of suspension were; Thoracic Surgery (31.7%), Orthopedic Surgery (26.2%) and Digestive Surgery (25.3%). The motives were divided into five groups: Doctors (47%), Nursing (1%); Patient (22%); Institution (10%) and other reasons (20%). **Conclusion:** the detailing of the suspension codes is essential for an accurate diagnosis of their real motives, providing practical information, correct and valuable in drawing up strategies to decrease this index. **Descriptors:** Perioperative Nursing; Indicators of Quality in Health Care; Teaching Hospitals.

**RESUMO**

**Objetivo:** avaliar as taxas e os motivos de suspensão das cirurgias. **Método:** estudo quantitativo, descritivo, realizado em um Centro Cirúrgico de um Hospital Escola do Paraná/PR. Os dados foram coletados dos relatórios de produtividade observando os motivos de suspensão, as clínicas responsáveis e a data da suspensão do procedimento; em seguida, foram tabulados e analisados pela estatística descritiva, com percentuais e distribuição de frequências absolutas. Esta pesquisa teve o parecer favorável do Comitê de Ética em Pesquisa, CAAE 0.0.268.000-10. **Resultados:** foram programadas 13813 cirurgias, destas, 17% foram suspensas. As maiores taxas de suspensão foram: Cirurgia Torácica (31,7%), Cirurgia Ortopédica (26,2%) e Cirurgia do Aparelho Digestivo (25,3%). Os motivos foram divididos em cinco grupos: Médicos (47%); Enfermagem (1%); Paciente (22%); Instituição (10%) e outros motivos (20%). **Conclusão:** o detalhamento dos códigos de suspensão é primordial para um diagnóstico acurado de seus reais motivos, fornecendo informações concretas, corretas e valiosas na elaboração de estratégias para diminuir este índice. **Descritores:** Enfermagem Perioperatória; Indicadores de Qualidade em Assistência à Saúde; Hospitais de Ensino.

**RESUMEN**

**Objetivo:** evaluar las tasas y los motivos de la suspensión de las cirugías. **Método:** un estudio cuantitativo, descriptivo, realizado en el Centro Quirúrgico del Hospital Escuela en Paraná/PR, Brasil. Los datos fueron colectados de los informes de productividad observando las razones de la suspensión, las clínicas responsables y la fecha de la suspensión del procedimiento, después, se analizaron las estadísticas tabulados y descriptivos, con porcentajes y la distribución de frecuencias absolutas. Esta investigación fue aprobada por el Comité de Ética en Investigación, CAAE 0.0.268.000-10. **Resultados:** hubo 13.813 intervenciones quirúrgicas programadas, de estos, 17% fueron suspendidos. Las mayores tasas de suspensión fueron: Cirugía Torácica (31,7%), Cirugía Ortopédica (26,2%) y cirugía digestiva (25,3%). Los motivos fueron divididos en cinco grupos: Médicos (47%), Enfermería (1%), Pacientes (22%) (10%) Institución y otros motivos (20%). **Conclusión:** los detalles de los códigos de suspensión son esenciales para un diagnóstico preciso de sus motivos reales, proporcionando información concreta, correcta y valiosa en la elaboración de estrategias para disminuir este índice. **Descritores:** Enfermería Perioperatoria; Indicadores de Calidad en la Atención de Salud, Hospitales de Enseñanza.

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## INTRODUCTION

Surgery is an extremely significant experience and generates stress for the patient and their family, who are surrounded with feelings of anxiety and fear. The eminence of the surgical procedure triggers physiological changes that prepare the patient's body for surgery.<sup>1,2</sup>

When the surgery is suspended, the patient has already gone through all the steps of the surgical preparation, i.e. was already hospitalized, has already done the pre-surgical exams, preoperative preparation and even, in some cases, forwarded to the Operating Room. Communicating that their surgery was suspended increases these changes and still adds to the disappointment and discouragement, because their condition is not improved.<sup>1,3-5</sup>

For some patients, the fact of canceling a procedure eagerly awaited for can have disastrous effects, even if the reason for suspension is clarified. The insecurity of this patient will be further increased if their surgery is suspended more than once. It is worth pointing out that failures in communication of the surgery suspension for the patient are common, and that often, they are not informed in a timely manner about possible changes in schedule surgical, such as delays, postponement or suspension. At this stage it is essential that the nurse establish an effective relationship with the patient, so that the communication is considered as important as the technical procedure.<sup>2,6,7</sup>

Surgery suspension is an insidiously common event in surgical planning and its main reasons vary from problems related to the patient, institution, medical and nursing team, among others.

Under the institutional perspective, the cancellation of a surgery influences a considerable number of people, for example, surgeons, anesthesiologists, nurses and nursing technicians. In addition, it involves the mobilization of a large quantity of materials and specialized equipment to meet the procedure, which ends up not happening.<sup>1,5,8</sup>

The high rates of surgery suspension are loss generators both for the patient and for the institution. In addition to the surgery program having a vacant time slot, reducing the number of surgeries performed in that period, it increases patient's hospitalization time, creating more expenses for the hospital. A study on the management of the costs caused by surgery suspension shows that the suspension of 58 surgeries entails R\$1,713.66

of costs in the studied institution. This expenditure is related to material consumption (R\$333.05), sterilization process (R\$201.22), medications (R\$149.77) and human resources (R\$1,029.62). In this study, it was observed that a large proportion of these suspensions could be avoided.<sup>9</sup>

The suspension causes patients to doubt the credibility and competence of the institution and of the professionals who work there, in addition to discouraging doctors in conducting their surgical procedures there, because they know that their surgery can be suspended.<sup>4,6,10</sup>

The impact of the surgery suspension for the patient requires further investigation. However, it is known that a surgical intervention requires a prior preparation, both on the part of the patient as well as the family, since it involves the acceptance of the surgical procedure, physical and psychological preparation, interference of lifestyle, socio-economic changes from the inability to work, in addition to a stress generated by fear of the unknown.<sup>10</sup> Expectations, doubts, anxieties and fears about what will happen and the possible consequences of this process are constant and may result from physical, emotional, social and spiritual changes.

Expectations of a patient who will undergo a surgical procedure are directed, therefore, to the surgical procedure and not its suspension. The suspension of a surgery can be analyzed under two aspects, the first, pointing to the patient and their family leading to frustration and economic loss for the individual and society. Especially if this patient has an informal occupation, where the time in which they are away directly interferes with their income, or even loss of employment. The second one is related to the consequences to the health institution, to the work process of the team, consumption of time, material resources, bed occupancy, Operating Room turnover, among others.<sup>11</sup>

Although the issue of surgery suspension is still inadequately researched, the literature brings published studies that bring rates and index, mostly with quantitative approach. Further research is needed to investigate this issue, so that professionals might be aware of the consequences of a surgery suspension and seek to create a safe environment, effective and capable of responding to patients needs.

The first step to develop strategies that minimize the impact of this problem, is the identification of suspension index and the accuracy of the codes used by the institutions to evaluate their motives. This study aimed to investigate the incidence of surgical

suspension in a Public Teaching Hospital and assess its real motives.

It is expected with the data from this study to provide subsidies for the creation of management methods that could reduce the incidence of surgical suspension, following up this indicator and demonstrating its importance for the professionals who work in the Operating Room.

## METHOD

Descriptive study that was carried out in the Operating Room of a large teaching hospital in northern Paraná, Brazil, which is a reference for orthopedic trauma, burn treatment and high-risk pregnancies, including caring for patients from other states. Monthly 500 large, medium and small procedures are performed, in average,. The Operating Room has a physical structure of seven surgical rooms, where six rooms are intended for elective procedures from Monday to Friday from 7am to 7pm, and a room for urgent and emergency procedures. On nights and weekends, the Operating Room services urgencies and emergencies.

In this study, reports on surgery suspensions generated by the program Blochos, were evaluated, from January 2009 to November 2010.

The program Blochos is part of a software package provided by WPD® (Integrated Solutions for Health Management), which manages all the information and processes of the hospital. Through it, information and reports can be requested, being an important tool for a diagnosis of the activities that occur in the institution. Through the report on surgery suspension, it is possible to obtain data on all suspensions that occurred during the study period.

With the aim of standardizing and accompany the surgery suspension, nurses have created a table of codes related to the reason for surgery suspension (Figure 1). The nurse or nursing resident upon being informed of the surgical procedure suspension, records the code for the suspension reason on the Procedure Notice Sheet. This sheet is subsequently scanned and can be consulted through the reports.

Suspension Codes			
1	Patient didn't show up	21	Insufficient Anesthesiologists
2	Suspended at the request of the clinic - Inactive - 06/01	22	Inadequate preparation by doctor
3	Absence of doctor/surgeon	23	Inadequate preparation by nursing
4	Patient discharge	24	Inadequate preparation by patient
5	Patient without clinical conditions in the pre-operative period	25	Preoperative death
6	Inactive - 06/01	26	No surgical indication
7	Rescheduled by the Clinic	27	Death during surgery
8	Inactive - 06/01	28	Inactive - 06/-01
9	Lack of specific material	29	Anesthetic complications
10	Yield to an urgency/emergency	30	Transferred to another institution
11	Inactive - 06/01	31	Lack of beds in the infirmary
12	Patient without clinical conditions in the pre-operative period	32	Improvement of clinical conditions
13	Exam not conducted	33	Missing informed consent form
14	Exam not solicited	34	Procedure scheduled for the wrong day
15	Exam not found	35	Refusal by the patient in the transoperative
16	Material not requested by the doctor	36	Refusal by the patient in the pre-operative
17	Material not requested by nursing	37	Duplication of scheduling
18	Material not released by the clinical director	38	Delay in the previous surgery
19	Lack of beds in the ICU	39	Structural Problems in the Surgical Center -01/07/10
20	Room occupied with morning surgery	40	Refusal of Doctor/Surgeon - 25/08/10

Figure 1. Motives for Surgery Suspension and their Codes

For data collection, two reports on surgery suspension supplied by the program Blochos was used. The first report depicts the quantitative of suspended surgeries and presents surgical clinics and their respective suspensions. The second report shows the reasons given for the suspension of these surgeries.

For tabulation and data analysis, Microsoft Excel 2010 was used. Data was analyzed by means of descriptive statistics, obtaining absolute frequencies and percentages. Data was grouped by reasons for suspension and by surgical clinics, arranged in tables and graphs

for better interpretation. In addition, rates of suspension per clinic were also calculated.

For access to the reports of the Blochos program, the project was approved by the hospital board and by the head of the Operating Room. The Secrecy and Confidentiality Term was signed and the research project was approved by the Ethics Committee in Research of the State University of Londrina (CONEP-268/CAAE 0.0.268.000 - 10). All ethical principles were respected, in accordance with Resolution 196/96 of the National Health Council.

**RESULTS**

In the period from January 2009 to November 2010, 13.813 surgical procedures were programmed, of these, 17% (n= 2412)

procedures were suspended, while 11.401 were performed. The number of surgical procedures and the monthly rate of suspension of the institution are presented in Figure 2.

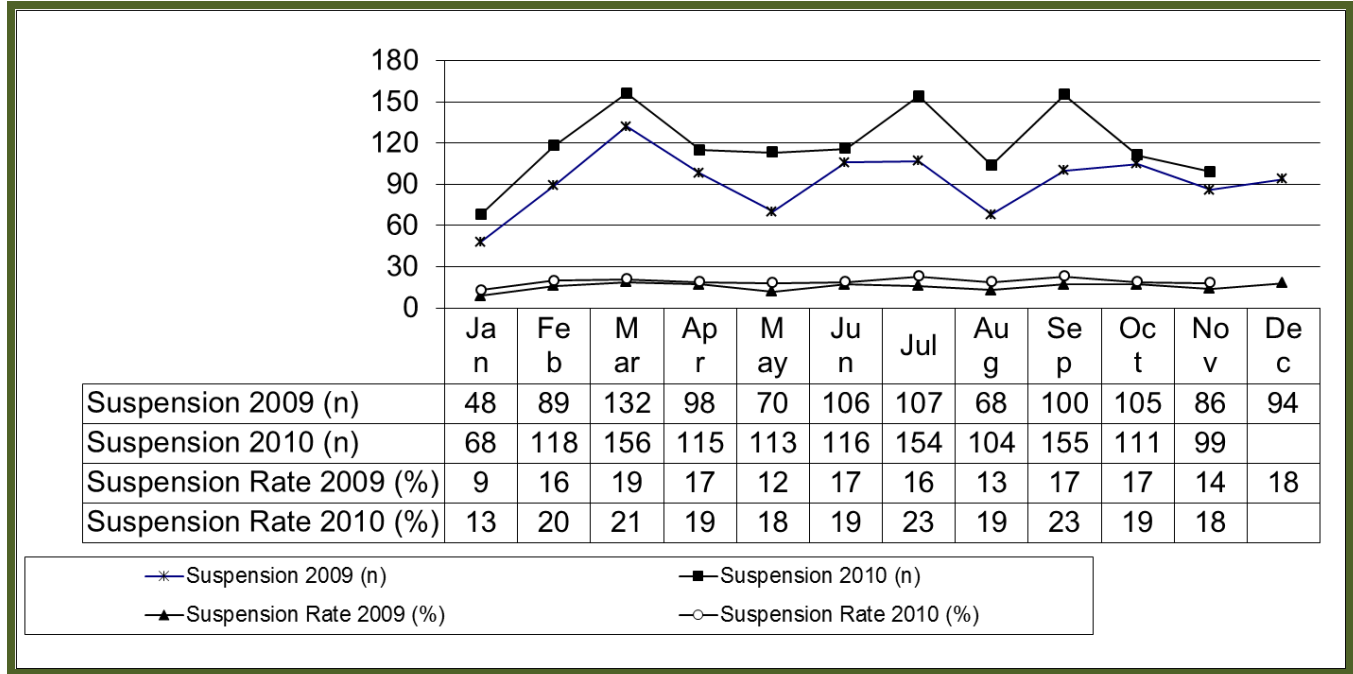


Figure 2. Historical record of suspensions and their respective rates of agreement with the months studied, in a Teaching Hospital located in the North of Parana, Brazil, January 2009 to November 2010.

The suspension rate is presented per clinic (Figure 3), together with the number of scheduled surgeries performed and suspended by clinic.

Clinics	Buco	Cad	Cipe	Go	Hemato	Neuro	Odon	Oft	Orl	Ort	Ccp	Psc	Psic	Torax	Vasc	Card	Uro	Plast	Gastro	Labio	Total
Suspension Rate (%)	12.2	25.3	5.8	11.6	16.9	14.2	15.0	16.5	9.3	26.2	10.8	19.0	5.1	31.7	23.7	10.3	9.2	7.3	11.1	0.0	17.5
No Performed	187	560	946	2217	226	400	510	560	49	2139	334	1443	12	457	453	529	89	89	164	64	11401
No. Suspended	263	190	580	290	460	660	91	111	51	758	48	338	62	212	141	66	91	71	20	02	2412
No. Scheduled	213	750	1004	2507	272	466	601	671	54	2897	379	1781	18	669	594	588	98	96	184	64	13813

Figure 3. Number of scheduled surgeries performed and suspended, along with the rate of suspension surgery in accordance with the occurrence between the surgical clinics in a Hospital School in Northern Parana, Brazil, January 2009 to November 2010.

BUCO - Maxillofacial; CAD - Digestive Tract; CIPE - Child Surgery and Pediatric; GO- Gynecology; HEMATO - Hematology; NEURO - Neurosurgery; ODONTO - Dentistry; OFT - Ophthalmology; DSB - Otorhinolaryngology; ORTOP - Orthopedics; CCP - Head and Neck Surgery; PSC - Emergency Surgical; PSIQ - Psychiatry; TORAX - Thoracic Surgery; VASC - Vascular Surgery; CARD - Cardiac Surgery; URO - Urology; PLAST - Plastic Surgery; GASTRO - Gastrology.

The motives related to surgery suspension were also investigated. Figure 4 shows the suspension causes divided into five groups: Doctors; Nursing; Patient; Institution and Other reasons. Each group was represented by the most incident reasons and the motives that had little impact were grouped in others.

The group of reasons related to the medical team are the most representative with 47% (n=1139) of suspensions. The main reason in this group, corresponds to the suspension at the request of the clinic. After a

preliminary analysis of the data, it became apparent that the reason, *suspension at the request of the clinic*, in truth, masked the real reasons that led to the suspension. Thus, starting in June 2010 this reason was removed from the table of codes of suspension and subdivided into detailed options that fit within this category, for better understanding and data reliability.



Suspension Motives		BUCO	CAD	CIPE	GO	HEMATO	NEURO	ODON	OFT	ORL	ORT	CCP	PSC	PSIQ	TORAX	VASC	CARD	URO	PLAST	GASTRO	OBST	TOTAL	%		
P A T I E N T	Unfavorable Clinical Condition	3	2	2	3	2	1	4	3	1	58	1	5	1	3	3	1	1	3	2	3	36	1		
	Inadequate Preoperative Preparation	2	3	1	7	6	1	2	1	3	23		7	1	1	2		4				2	66	3	
	Refusal in the Pre Operative	1	1	2	7	1			2		5			1		4		3				5	32	1	
	Evasion		1	1	1				1		1		3					4				1	13	1	
	Other		2	2		2	1		6		12		8		8	4		3						48	2
	TOTAL	6	2	2	4	3	1	6	4	1	99	1	6	3	4	4	1	2	3	2	1	1	52	2	
	At The Request of the Clinic*	8	3	1	4	6	1		1	6	21	1	1	1	4	3	4	2				3	60	2	
D O C T O R S	Delay in the previous surgery	1	2	1	1				2	7	55		1		1	4		7	1			2	16	7	
	Rescheduled by the Clinic*	2	1	1	1	2	3		5		39		6		9	4	1	3				3	10	4	
	No surgical indication	1	2	2	1	2	2		1	5	18	1	1		1	6		8				1	10	4	
	Absence of the Faculty	1	3		8		2		4		35	1	5		1	7						3	82	3	
	Other	1	1	1	5				1	5	37		4	1	5	4		2	1				82	3	
	TOTAL	1	9	1	1	1	1	0	5	2	39	3	1	2	9	5	5	4	2	0	4	4	11	4	
		4	9	6	0	0	9		3	3	9		5		8	7		0				8	39	7	
I N S T I T U T I O N	Lack of beds in the ICU		3		2		1			1	39		6		1	1		1				1	13	5	
	Lack of specific material		4	5	4		6	1	8	3	40		4		6	1		9					91	4	
	Lack of beds in the infirmary		2	1				1		1	5		9			3							22	1	
	Other		2		1						2				1			1	1				8	0	
TOTAL	0	4	6	7	0	2	2	8	5	86	0	1	0	2	1	0	1	1	0	1	0	1	25	1	
E N F	Inadequate Preoperative Preparation			1						4		3		1								1	10	0	
	TOTAL	0	0	1	0	0	0	0	0	4	0	3	0	1	0	0	0	0	0	0	0	1	10	0	
	Priority to an urgency/emergency	6	1	6	4	3	3		4	6	16		9	1	4	1		1	1			2	44	1	
O T H E R	Exam not conducted		4		7		2		1	3	7		3		1	4		2					34	1	
	Other					1	1	1				1			1								5	0	
	TOTAL	6	2	6	5	4	5	1	6	9	17	0	9	1	4	2	0	1	1	0	2	48	2		
<b>TOTAL SUSPENSIONS</b>		2	1	5	2	4	6	9	1	5	75	4	3	6	2	1	6	9	7	2	8	24	1		
		6	9	8	0	6	6		1	1	8		3		1	4		1			1	12	0		
		0		9					1				8		2	1							0		
<b>%</b>		1	7	2	8	1	2	0	4	2	31	0	1	0	8	5	0	3	0	0	3	10			
		.	.	.	.	.	.	.	.	.	.4	.	4	.	.	.	.	.	.	.	.	.	0		
		1	9	4	7	9	7	4	6	1		2		2	8	8	2	8	3	1	4				

Figure 4. Reasons related to the surgery suspension, grouped by reasons and described in accordance with the occurrence between the surgical clinics in a Hospital School in Northern Parana, January 2009 to November 2010.

BUCO - Maxillofacial; CAD - Digestive Tract; CIPE - Child Surgery and Pediatric; GO- Gynecology; HEMATO - Hematology; NEURO - Neurosurgery; ODONTO - Dentistry; OFT - Ophthalmology; DSB - Otorhinolaryngology; ORTOP - Orthopedics; CCP - Head and Neck Surgery; PSC - Emergency Surgical; PSIQ - Psychiatry; TORAX - Thoracic Surgery; VASC - Vascular Surgery; CARD - Cardiac Surgery; URO - Urology; PLAST - Plastic Surgery; GASTRO - Gastrology.

\* By not reporting the real reason for the suspension, these reasons have been removed from the surgery suspension table of codes, from June 2010.

In figure 5, the total suspensions that occurred in the last 5 months prior to detail in codes in comparison with the 5 months after the changes were grouped. The reasons presented are those that have suffered the greatest changes.

Reasons for Suspension	Before the changes (5 Months) Jan - May	After the changes (5 Months) Jun - Oct
* At the request of the clinic	177	5**
Absence of surgeon	25	36
Without clinical conditions	81	107
Rescheduled by the Clinic	17	58
Lack of specific material	18	29
Yield to an urgency/emergency	108	179
Lack of beds in the ICU	21	47
Delay in the previous surgery	31	68

\*Reason removed \*\*Last reasons recorded after the removal of this reason in table of codes

Figure 5. Reasons related to the surgery suspension, related with the changes in the table of codes in a Teaching Hospital in the North of Parana, from January to October 2010, after the detailing of the codes.

## DISCUSSION

The rate of suspension during the study period was 17%. In other studies, lower suspension rates were found: 5.1%<sup>8</sup>, 6.38%<sup>1</sup>, 11.4%<sup>3</sup>, 12%<sup>12</sup>, 16%<sup>13</sup>, and larger: 19.91%<sup>5</sup>, 33%<sup>10</sup>. It is noteworthy that, in order to calculate the rate of surgery suspension, the number of suspended surgeries should be divided by the total of scheduled surgeries in a given period and multiplied by 100.<sup>14</sup>

The underreporting of surgery suspension is a common practice in health institutions. This practice undermines productivity indicators, leading to false interpretation. Some studies have reported the possible occurrence of underreporting and in our institution it is observed in some cases that the doctor orders the surgical preparation for the patient, but does not book the surgery at the Operating Room, causing suspension rates for his clinic to be lower than in reality.<sup>1</sup>

The importance of studying surgery suspension as an indicator of productivity is due to the fact that professionals evaluate and analyze relevant aspects of the care provided. This analysis allows for the identification of the difficulties presented in the flow of information and the work dynamics of the Operating Room.

Surgical suspension triggers repercussions of the population's ability to access surgical procedures. Despite health is presented as a right of all, it is noted that in practice it is not exactly what happens. The long waiting lines for surgery have been an insidious and cruel reality in the Brazilian healthcare system, often resulting in years of waiting. The media, as an attentive decoder of this reality, has registered this fact insistently but fruitlessly.

The waiting line, translated by the list of patients who needs medical treatment whose demand is higher than the supply<sup>15</sup>, is insufficiently discussed and studied by the

health community. Much can be done, however, to accelerate the turnover of the waiting lines. The control of suspension rates is without doubt, one of the efforts with direct repercussions on this waiting time, aiming at the maximum use of available resources.

Studies on the topic indicate that all health institutions are affected by surgery suspension in general. The suspension causes damage both to the institution, as well as to professionals and patients who depend on the surgical procedure for the restoration of their health.<sup>8,10</sup>

At the studied institution, the clinics with higher rates of suspension were Thoracic Surgery (31.7%), Orthopedic Surgery (26.2%); Digestive Surgery (25.3%) and Vascular Surgery (23.7%). These clinics are responsible for 1.796 (74%) of suspensions. The clinics with higher rates of suspension mentioned by the literature, are General Surgery<sup>10</sup>, with 33.8%<sup>3</sup>; 28,95%<sup>1</sup>; 15.7%<sup>8</sup>, Clinical Ophthalmology<sup>10</sup>, with 10.9%<sup>8</sup>; 13.16%<sup>1</sup>; 39.9%<sup>16</sup> and Orthopedic Surgery<sup>10</sup>, 28.5%<sup>3</sup>; 16.8%<sup>16</sup>. Other clinics were cited as the Otorhinolaryngology Clinic, 20.5%<sup>8</sup>; 15.9%<sup>16</sup>, Head and Neck Surgery<sup>10</sup>, Urological Surgery, 13.16%<sup>1</sup> and Pediatric Surgery, 9.6%<sup>3</sup>.

In the beginning of this study, reasons related to the medical team had the highest incidence with 1139 (47%) of the suspensions. Among these, it was observed that a high incidence (601/5%) of suspensions was assigned a code that does not correspond to the real meaning of suspension: the famous "at the request of the clinic". The researchers made the decision to remove this code, causing the surgeon specify the actual reason for the suspension.

The data that arose after this intervention (Figure 5), shows the redistribution of rates of suspension in other reasons that were previously not so frequent, demonstrating the

importance of the elaboration of actual codes of suspension that reflect the true reason for the surgery suspension.

Contradicting this research data, the literature presents the reasons related to the patient, as the main cause of suspension.<sup>1,3,5,8,13</sup> It is discussed that reasons related to the medical team, which denote problems in the organization of clinical care to their demand surgical, are possible to be prevented.

The overbooking of surgical procedures, scheduling of fictitious patients to reserve surgical slots, surgeries suspended due to changes in surgical procedures recommendation, absence of the surgeon and other reasons inherent to a teaching hospital, were also highlighted by other studies.<sup>5,8,13</sup>

The category that covers reasons related to the patient was responsible for 22% (526) of the suspensions. Other studies suggest that the reasons related to the patient are the greatest causes of suspension: 86.4%<sup>1</sup>; 70.43%<sup>5</sup>; 57.8%<sup>8</sup> and 48.23%<sup>13</sup>.

The unfavorable clinical status of the patient for surgery (367/15%) and inadequate preparation on the part of the patient (66/3%) were the main reasons for suspensions of this group. This reason truly justifies the suspension of surgery. Strategies such as the preoperative visit and a pre-operative monitoring of patients, aiming to stabilize their clinical condition before surgery are identified as viable alternatives to decrease the suspensions for this reason.<sup>1</sup> Similar results were presented by other studies, 32.1%<sup>3</sup>; 56.3%<sup>8</sup>; 50.3%<sup>13</sup>; 16.13%<sup>5</sup>.

The reasons related to the institution are primarily due to lack of beds in the Intensive Care Unit (ICU - 131/5%). Many healthcare services face problems of overcrowding. In the researched institution it was not different, and the high demand for ICU beds, causes surgical cancelation of patients requiring specialized monitoring and continuous post-operative care. The lack of beds in the ICU is also responsible for permanence of acute patients in the Operating Room, even after the procedure, mainly emergency patients.

The lack of materials and specific equipment (91/4%) for completion of the surgical procedure was the second largest cause of suspension in this study. The literature suggests similar findings: 1.6%<sup>8</sup>, 5.12%<sup>13</sup>, 3.23%<sup>5</sup> and 7.6%<sup>1</sup>.

For the surgical team, the lack of materials and equipment imposes difficult choices, due to the need to prioritize a patient at the expense of another. This choice is an ethical and moral dilemma, particularly when the

surgical indication was already established; the patients are in fasting and clearly are emotionally directed to carry out the surgery and not to its cancellation.<sup>17</sup>

Public health institutions present a great challenge when analyzed from the point of view of the acquisition of materials and equipment. In addition to the delay and bureaucracy in the purchase of inputs necessary for carrying out the procedures, we have to take into account the devastation ever greater of existing resources. It is possible to affirm that this situation leads to a constant wear on the part of professionals and also for the patient who is still waiting for the completion of their procedure.<sup>6,18</sup>

## CONCLUSION

This study portrays the seriousness and significance that the suspension surgery entails for public institutions. The suspension rate in this study was 17%, and clinics with the highest rates of suspension were: Thoracic Surgery, Orthopedic Surgery, Digestive Surgery and Vascular Surgery. These clinics were responsible for 1796 (74%) of suspensions.

The reasons for the suspension related to the medical team showed the highest incidence, followed by reasons related to the patient and institutional motives. It is of utmost importance, not only to quantify surgical suspensions, but also qualify them, identifying their motives and the actors involved, thus allowing the development of strategies to reduce these indices.

The results of this study, however, indicate that the clear and detailed description of codes of suspension is essential for an accurate diagnosis of the real reasons for the suspension of the surgeries.

Based on the data presented by this research, possible solutions and strategies were discussed with the management group of the institution. Proposals were listed, as the activation and deployment of a surgical room exclusively for the service of traumatology and orthopedics, the realization of a fast track surgeries and having elective surgeries in alternate periods such as weekends and evenings. Sufficient number of anesthesiologists was also pointed out as a proposal to reduce the rates of surgery suspension.

It is essential that the cancellation of surgeries is monitored and discussed with the purpose of bringing compatible solutions with the reality of each institution, by raising awareness among managers of the institutions regarding the surgical suspension problems and their consequences. Therefore, statistical

data and updated indicators are indispensable tools for the creation of institutional policies aimed at reducing rates of surgical suspension. The nurse, as an active element in the interface in all phases of the perioperative period, can be a crucial element in this process.

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