Renegotiations and Disallowances by Health Board for Medical-Hospital Care and High-Cost Procedures from Brazilian Army Health System in 2021

Wagner Elpídio do Nascimento^{1*}, Carlos César Ribeiro Santos¹, Letícia de Alencar Pereira Rodrigues¹, Jonata Souza dos Santos¹

¹SENAI CIMATEC University Center, Salvador, Bahia, Brazil

This article describes the worth of renegotiations and disallowances by the Health Board of the Brazilian Army for high-cost procedures in 2021 from all military regions. Its principal objective is to describe the economy resulting from the values renegotiated and/or disallowanced by the Board. The specific purposes are to describe the renegotiated and/or disallowanced values distinguished from each military region, to mention the primary medical specialties, and list the main reasons for renegotiations or disallowances, suggesting measures to outcome the Brazilian Army's health audit services. It is a retrospective, descriptive, qualitative, and quantitative study. In the results, the 11th, 7th, and 2nd Regions stand out with the highest total values in the authorizations, renegotiations, and denials of 2021. Cardiointervention and Neurosurgery/Neurointervention were the areas with the most significant prominence in values, followed by Orthopedics, Oncology, Urology, and home care. We suggested measures to improve the performance of the Brazilian Army's health audits teams, such as training and continuous education; elaboration and regular updating of the Standard Operating Procedures in audit processes; the exclusive dedication of audit team members, avoiding functional deviations; construction and updating of local market value indicators for orthoses, prostheses, and special materials; use and regular updating of the Brazilian Army's assistance protocols; closer communication between the Board of Health, Military Regions and Military Health Organizations. This article explored the theme; however, further research must deepen and corroborate our study.

Keywords: Health Audit. Medical Audit. Disallowances. High-Cost Procedures.

Introduction

The Brazilian Federal Constitution defines the Armed Forces in article 142 [1] as permanent and regular national institutions whose purpose is to defend the country and guarantee constitutional power, law, and order [1]. In this context, the Brazilian Army (BA) is permanently present in all states and the Federal District to fulfill its attributions. In addition, its contingent is distributed throughout the national territory in 12 Military Regions (MR), which are subordinated to 8 Military Area Commands (Figure 1).

Considering the national scope of BA, it is fundamental for military agents and their

Received on 15 September 2022; revised 28 November 2022. Address for correspondence: Wagner Elpídio do Nascimento. by Letícia de Alencar Pereira Rodrigues. Avenida Orlando Gomes, Piatã, Salvador, Bahia, Brazil, +55 71 99131-8624.E-mail: leticiap@fieb.org.br. DOI 10.34178/jbth.v5i4.254.

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dependents to have an organizational structure for determined health care with outstanding coverage.

Within this scenario, there is the Army Health System (SSEx, Sistema de Saúde do Exército, in Portuguese), responsible for ensuring health care for hundreds of thousands of users, whether they are military (active or inactive), dependents, pensioners or civil servants connected to the Army and their dependents in all Federation units.

SSEx comprises Military Health Organizations (MHO), administratively subordinated to each MR. It is also technically subservient to the Health Board (DSau, *Diretoria de Saúde*, in Portuguese), a technical-normative and managing health support body of BA, located in Brasília - DF, which is subordinated to the Human Resources Department (DGP, *Departamento Geral de Pessoal*, in Portuguese) [2].

SSEx Management Units (SMU) are the Military Organizations (MO) and the MHO. They are responsible for registering expenses related to assistance provided to SSEx beneficiaries and for paying expenses of Civil Health Organizations

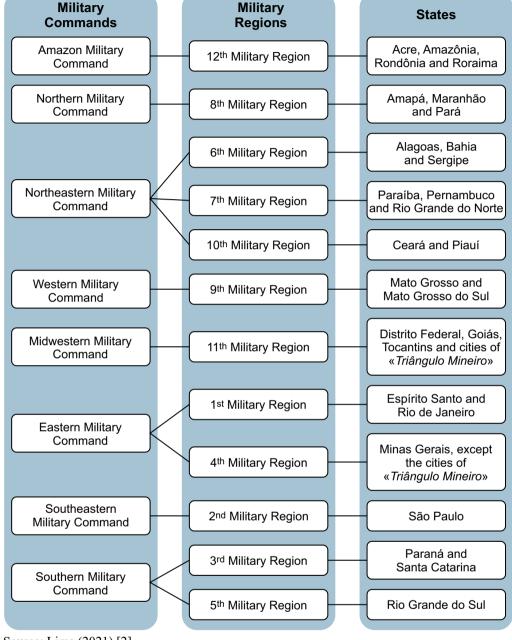


Figure 1. Distribution of the Brazilian army in the national territory.

Source: Lima (2021) [2].

(CHO) and Autonomous Health Professionals (AHP) [3].

The structure of SSEx is hierarchical and composed in increasing order of complexity:

- 1. Medical Posts;
- 2. Garrison Hospitals;
- 3. General Hospitals;
- 4. Region Military Hospitals;

5. Central Army Hospital (CAH) (the unit with the high complexity of the BA, in Rio de Janeiro – RJ).

Still, regarding the structure of the SSEx, there is the Military Hospital of Resende (which directly supports the "Academia Militar das Agulhas Negras"), the Field Hospital, the Military

Polyclinics, the Central Dental Clinic of the Army, the Army's Chemical-Pharmaceutical Laboratory and the Army Institute of Biology. Finally, each MO has its own Health Training (Health Section) for essential military assistance.

Figure 2 shows the distribution of MHO in the MRs. Despite BA's extensive MHO network, when the MHO assistance capacity is depleted, the assistance is extended to the network hired, insured, or regionally accredited CHO and AHP [2].

Investing resources in medical hospital care (MHC) in CHO and AHP is crucial for the sustainability of SSEx. Furthermore, the life expectancy increase in the Brazilian population, with a growth in the prevalence of chronic degenerative diseases, medical inflation, and the frequent emergence of new health technologies, leads to a significant challenge in managing the SSEx budget.

In this scenario, auditing health accounts assume fundamental importance for budget control and continuous search for improving SSEx.

The first health audit practices date back to the 1920s, through a retrospective analysis of medical records [4]. The audit concept was proposed in 1956 by Lambeck, who defined it as a mechanism for assessing the quality of care based on direct observation, records, and the patient's clinical history [5].

In Brazil, one of the first official health audit documents was a publication by the Regional Council of Medicine of Paraná in 1983 [6]. In the following years, with the ruling of the Federal Constitution of 1988 and the advent of the Unified Health System (SUS, *Sistema Único de Saúde*, in Portuguese), the audit became a tool used in health care by the SUS, through private health service providers and health insurance [2]. As a result, the law No. 8689, regulated by Decree No. 1651 of 1995, created the SUS National Audit System (NAS) [7].

Regarding BA, the regulation of auditing in health began with the Ordinance of the Army Commander no 759 of December 20th, 2002, which approved the legal Norms for Implementation

and Operation of Medical Ethics Commissions for Review of Medical Records, Medical Bills Compliance, and Hospital Infection Control at the Brazilian Army MHO [2]. Furthermore, article 20 describes the attributions of the commission for the fairness of medical bills [8]:

[...] carry out a technical, ethical, and accounting review of hospital and outpatient bills from providers contracted/accredited by SSEx, to avoid possible distortions, control the quality of services, and, above all, ensure the judicious use of financial resources.

The evolution of the auditing medical bills process in BA led to the publishing of the Technical Standard on Medical Auditing of the Brazilian Army (NTAUMEx in Portuguese) in 2017, which, in article I, guides the procedures of the external and internal medical audit services in MO or MHO under the responsibility of the Management Units [9]. In addition, this norm contains guidelines on the minimum composition of the MU audit teams and their attributions. However, a new NTAUMEX is being prepared, replacing the current one.

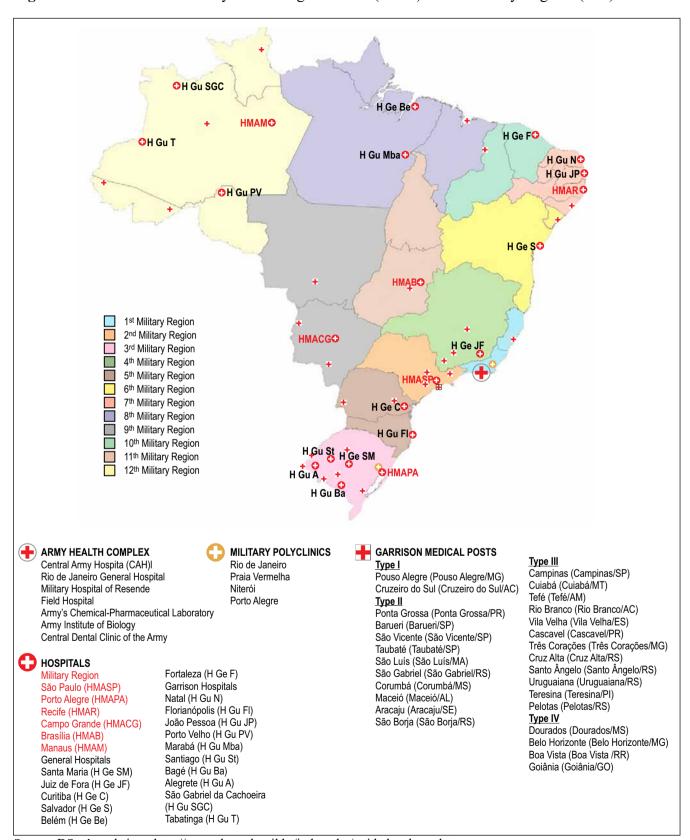
This study focused on the audit of BA medical bills, specifically on financial gain obtained by DSau from the renegotiations and the disallowances in the processes of pre- and post-audit for MHC; and high-cost elective procedures coming from all MRs in 2021.

However, considering DSau's renegotiations and disallowances for MHC and high-cost procedures could already be checked at MHO, what measures can be suggested to optimize health audit actions in BA to avoid rework, whether from MHO, MR, or DSau?

This question led us to the principal and specific objectives of this study. We structured this work into four sections:

- 1st Section: Theoretical reference to the theme;
- 2nd Section: Methods;
- 3rd Section: Data analysis with results and discussion:
- 4th Section: A brief conclusion.

Figure 2. Distribution of Military Health Organizations (MHO) in the Military Regions (MR) in Brazil.



Source: DSau's website. http://www.dsau.eb.mil.br/index.php/unidades-desaude>.

Theoric References

The work of the Brazilian Army's health auditor is crucial since it contributes to raising the level of user satisfaction, helps the rational and adequate allocation of resources in assistance, minimizes waste, and enhances the effectiveness and efficiency of the SSEx. Furthermore, it enables more investments in the MHO network, increasing its resolution and reducing the need for expenses with CHO and AHP.

Regarding the audit activity, Maia and Paes [10] mention, "The word Audit comes from the Latin AUDITORE, which means the listener who listens. It is the expert in charge of examining accounts. It is the independent assessment and advisory activity of the upper echelon in management [...] addressed to examining and analyzing adequacy, efficiency (the action), effectiveness (the result), effectiveness (the desire; cost/benefit), and quality in health actions, practiced by service providers, under the quantitative (production and productivity), qualitative and accounting (operating costs) aspects, in compliance with ethical and legal precepts.

Maia and Paes [10] also point out that auditing health services are one of the most relevant topics for nosocomial institutions, essential for maintaining the financial sustainability of such organizations.

More broadly, Morais and Burmester [6] argue that a good health audit system should be developed in three major segments:

Operational Audit: Focusing on control and execution of assistance.

Analytical Audit: Focusing on indicators of care processes.

Clinical Audit: Focusing on improving the quality of processes and care outcomes.

They also classified the audits within the operational aspect as follows:

Preventive: Pre-audit, clearance, or prospective audit. An audit that aims to analyze the adequacy of the diagnostic and therapeutic proposal for

each case, according to health guidelines and/or respective contracts for extra health care.

Concurrent: Operative, concurrent, or hospital bed audit. This audit occurs during the assistance and aims to evaluate and adjust the care plan. Retrospective: Post-event, review, or account audit. This audit occurs after a care event and seeks to analyze the adequacy of the care offered.

The Army Ordinance Commander nº 1.585 of October 2, 2019, approved the General Instructions for implementing PASAM [11]. The preface mentions [11]:

[...] The achievement of this Program involves a permanent process of evaluating and certifying the quality of health services, which promotes the continuous improvement of Military Health Organizations based on the priorities: the USER, ECONOMY, and LEGALITY of the actions. [...]

Accreditation is a voluntary process through which health institutions commit to improving the safety and quality of patient care and ensuring a safe environment, reducing risks to patients and professionals.

The constant evolution of techniques and the daily incorporation of new technologies into health services have made hospitals complex. Therefore, it is essential to highlight the constant search for service excellence, focusing on patient safety and administrative efficiency.

It is imperative to bring to the Army Health System these instruments that are being created to guarantee patient safety and quality in health care, strengthening the task of developing its health accreditation system for military assistance.

PASAM has been conducting diagnostic and follow-up visits to all MHOs at Garrison Hospital level or higher, with the perspective of accreditation by the program as of 2023.

After a quick explanation of the current status of the healthcare quality audit in BA, we return to the focus of this study. First, considering SSEx, NTAUMEx defines the stages of activities related

to the BA's medical audit services (article 14 and paragraphs) [9]:

- I Preliminary, Prior or Prospective Audit: It concerns preliminary analyses and authorizations for requested exams or procedures following the coverage parameters provided in current legislation and Accreditation Terms. This step is essential for releasing exams/procedures of high-cost and elective-base hospitalizations [..].
- II Concurrent or Concomitant Audit: It is about the follow-up and development of hospitalization, involving timely authorizations by the Medical Auditor resulting from daily visits to patients hospitalized in CHO and follow-up of surgical procedures in loco by the auditor to qualitatively/quantitatively validate the OPME used.
- III Retrospective or Posterior Audit: It is about the information that will be analyzed after the presentation of the Invoices and that will allow the formal registration of nonconformities and the monthly entries of the used services in the systems developed or outsourced for this purpose by the Army.

NTAuMEx highlights the accounting of health auditing, especially about authorizations, monitoring, and verification of the assistance provided in the CHO and the resulting medical bills. Lima [2] summarizes it as follows:

[...] for Brazilian military organizations, health auditing is a management tool for contracts with private organizations that provide health services on a regional basis for monitoring and supervising their proper compliance.

It is crucial to know some points of the Brazilian legislation to understand the principal goals of this study.

Considering that the present study handles highcost medical procedures that occurred in 2021, it is opportune to address the rule in force since the definitions of values for high-cost procedures were determined by Ordinance No. 235-DGP of 10 October 2017, after revoked by Ordinance No. 372-DGP of February 14, 2022. Ordinance 235-DGP approved the Norms for Directing SSEx Beneficiaries to the Assistance Unit, CHO, or AHP of another MR or a garrison of the same MR. Figure 3 presents the authorization flowchart for highly complex elective procedures.

According to Ordinance No. 235 in its article 2nd, SSEx beneficiaries may be referred to MHO or CHO from other garrisons or MR if the technical capacity in the garrison of origin is exhausted or when the cost of the procedure in another garrison or MR is lower than that of origin.

For example, the origin - MU FUSEx/MO - can forward high-complexity cases to the reference MU FUSEx/MHO or CHO. However, up to the limit of BRL 5,000.00, decision-making autonomy rests with the MU FUSEx.

For amounts from R\$ 5,000.01 to BRL 20,000.00, decision-making autonomy becomes to the MRs. However, it is still up to the reference MU/FUSEx MHO to quote the more complex procedure with local CHO, MHO, such as CAH, Military Forces Hospital (Hospital das Forças Armadas - HFA, in Portuguese), or Militar Hospital of São Paulo Region (Hospital Militar da Área de São Paulo - HMASP, in Portuguese).

The last one is for neurosurgical situations and the quotation with the Garrison Medical Center in Belo Horizonte, which has a proper table of values for an orthosis, prosthesis, or unique material – OPME (*órtose, prótese materiais especiais*, in Portuguese) – with better prices than other MRs). Such quotes will support MR's decision, which may handle the patient to another garrison or MR, request OPME renegotiation or authorize the procedure at a local CHO.

When amounts exceed BRL 20,000.00, MR delivers the authorization analysis to DSau, which, in turn, can conduct the patient to another garrison or MR, soliciting OPME renegotiation or authorizing the procedure at a local CHO. It is customary for cases evaluated by DSau to undergo analysis by the technical chamber of the specialty relevant to the requested procedure,

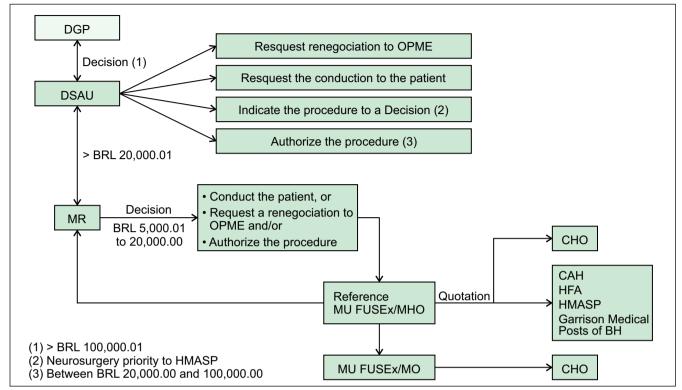


Figure 3. Flowchart for highly complex elective procedures.

Source: Brasil, Ministério da Defesa, Exército Brasileiro, [12].

when necessary, before the decision of the Board. It is essential to point out that, similarly to what happens in RM, the analysis of the DSau must be supported by quotations made previously by the reference MU/FUSEx MHO, responsible for the beneficiary.

Finally, for procedures with values greater than BRL 100,000.00, the decision is up to the DGP, always after listening to DSau, following the exact established quotation.

Materials and Methods

This research focuses on the renegotiations, and disallowances carried out by DSau in the pre- and post-audit processes for MHC and high-cost elective procedures from all MRs in 2021. It is a retrospective, descriptive, quantitative, and qualitative research 13].

The data collected came from the control sheet for renegotiations and disallowances of MHC and high-cost procedures from the Regulation and Auditing Division in Health (DRAS, Divisão de Regulação e Auditoria em Saúde, in Portuguese) of DSau. Moreover, the time interval of the data was restricted to 2021.

The variables considered were the final total value of the procedures after renegotiations and/ or disallowances, with the respective returns (\$) obtained per MR and month, highlighting the medical specialties and the higher cost procedures and the principal reasons for savings in renegotiations.

Based on data analysis, this study suggested measures that may improve the audit process of accounts for MHC and costly procedures under SSEx.

Data Analysis

We started with the total amount of MHC and high-cost procedures that were renegotiated or disallowances when analyzed by DSau, and their respective MR of origin (Figure 4).

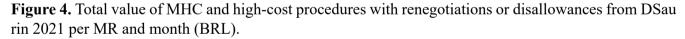
Figure 4 shows the 12 MRs and the total costs for MHC and procedures greater than BRL 20,000.00 in 2021 that were subject to disallowance or renegotiation by DSau. The colorful blocks symbolize each month. We highlighted three RMs: the 11th RM, which had a total value of BRL 3,507,979.00 in 2021, followed by the 7th RM, whose value was BRL 3,468,163.00, and the 2nd MR, with BRL 2,037,886.00.

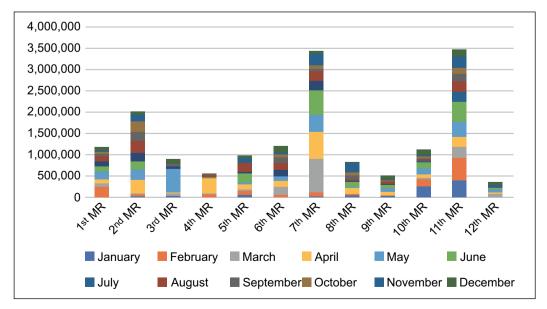
Figure 5 shows the total savings from D Sau's renegotiations and disallowances from MHC and high-cost procedures in 2021 and their respective MRs. The colorful blocks symbolize each month. The first three places are the same compared to Figure 4. However, there is an inversion between the first and second places, in which the 7th MR leads with a value of BRL 906,314.70, followed by the 11th MR with BRL 792,842.60, and the third position goes to the 2nd MR, with BRL 394,102.50.

Figure 6 identifies the MHC or the individual procedure at the highest cost each month of 2021. In April, the 4th RM was the highest value, with a total cost final amount of BRL 334,507.10, resulting from a vascular surgery procedure to correct an aneurysm. This value was the final amount after the disallowance of BRL 50,102.72, referring to

OPME. The 2nd place among the highest costs for single-user MHC came from the 3rd MR, BRL 322,192.60, after savings of BRL 42,498.77 due to adjustments in the billing. It occurred in May 2021 for oncological chemotherapy treatment. The 3rd position of the year came from the 7th MR, in March, BRL 249,297.00, after savings of BRL 42,990.04 in renegotiation, due to a heart valve replacement.

Figure 6 also presents in January 2021, 10th MR, a percutaneous implantation of the aortic valve, BRL 145,727.32, after a disallowance of BRL 38,732.00 in OPME; February 1st, MR, a spinal cord neurostimulator implantation, BRL 168,573.35, after savings of BRL 32,544.00 in the OPME renegotiation; June, 7th, MR, a percutaneous implantation of the aortic valve, BRL 233,760.82, after renegotiation of BRL 7,805.00; July, 1st, MR, myocardial revascularization and an aortic valve replacement, BRL 120,941.09, after disallowance of BRL 3,393.84 of medical fees; August, 2nd, MR, a clinical hospitalization, BRL 143,122.84, after disallowance of BRL 2,979.92, due to a mistaken charge of materials; September, 6th, MR, an endovascular neurosurgery, BRL 141,240.36, after disallowance of BRL 2,539.97 of medical





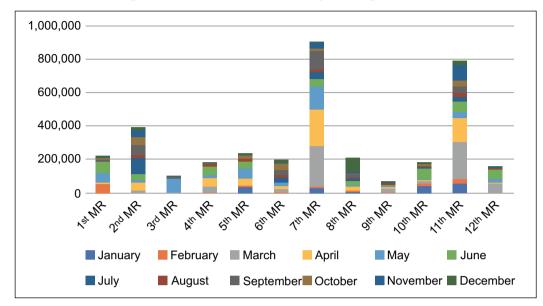
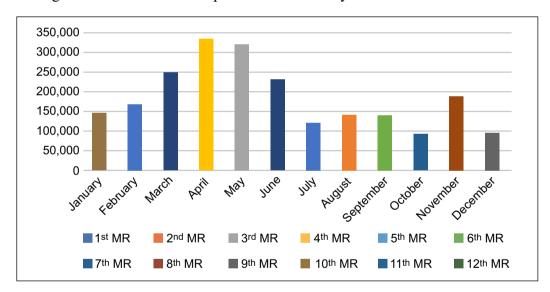


Figure 5. Total value of renegotiation and disallowances by DSau per MR and month in 2021 (BRL).

Figure 6. The highest value of MHC and procedures month by month in 2021.



fees; October, 11th, MR, an implantation of a multisite stimulator by cardiointervention, BRL 92,188.29, after disallowance of BRL 16,446.35 of OPME and medical fees; November, 8th, MR, a clinical hospitalization, BRL 188,450.13, after the disallowance of R\$ 6,000.00 for hemodialysis; and December, 9th, MR, a neurointervention for embolization of a cerebral aneurysm, BRL 97,325.17, after savings of BRL 1,400.00 in renegotiation.

Our results show that the most significant individual expenses in 2021 were cardiology/cardiointervention

and neurosurgery / neurointervention. If we extend the analysis to the total number of MHCs performed in 2021, these medical fields will continue to have high costs. However, other specializations, such as orthopedics, home care, oncology, and urology, deserve attention.

The main reasons for renegotiations or disallowances, both in Figure 6 and in the data set analyzed control spreadsheet of renegotiation and disallowance for MHC and high-cost procedures by DRAS / DSau, there is a clear emphasis on the

economy obtained by OPME renegotiations that preceded the authorization to issue the Referral Guide (RG) for the procedures (still in the prior audit), followed by far by disallowances of medical fees (in the prior or subsequent audit), from OPME (in the subsequent) and charge adjustments in other items (in the pre-audit or post-audit).

Despite the 1st MR had the most significant number of SSEx users, it was not among the three highest costs in 2021. It occurs because the 1st MR has the most complex MHO of the SSEx, and HCE, reducing its need for CHO referrals. Regarding the total value of the MHC and highcost procedures of the three MRs with the most expenses in 2021, we observed that, for the 7th MR, the amount saved with disallowances and/ or renegotiations corresponded to 20.72% of the initial value requested for authorization to issue RG, while in the 11th MR, the savings were of 18.43% and in the 2nd MR were of 16.21%. These savings values occurred by DSau's analysis, mainly in the previous audit but, in some cases, in the subsequent audit of the services provided in the CHO and respective MRs. The services had already been audited by the respective MHO involved, but they still reached DSau requiring renegotiations or, in some cases, disallowances.

Santos and Rosa [14] present a study in which they verified disallowances from hospitalized patients during two months of 2012 in a private hospital with 99 beds in São Paulo, Brazil, with about 700 hospitalizations and 150 surgeries per month, it appears that the disallowances made by the supplementary health operator were 11.06% of the total value of the bills analyzed in the first month of the study and 6.21% in the second month.

Comparing our results with those identified by Santos and Rosa [14], there was a lower percentage of disallowances compared to the total amount of invoices. However, while Santos and Rosa [14] analyzed only two months and restricted themselves to the subsequent audit, the current research studied an entire year and the values, both of the previous audit (renegotiations) and later (disallowances and renegotiations). From the analysis of medical specialization that stood out among the expenses of MRs, the predominance was surgical and oncological treatments, followed by home care.

These facts emphasize the importance of checking the DSau's website, in which there are several Protocols and Instruction Booklets (Orthopedics Instruction Booklet, Neurosurgery Protocol, Oncology Protocols, Cardiac Surgery Medical Specialties Instruction Booklet, Oral and Maxillofacial Instruction Booklet, High Complexity Procedures, among others) because these sources are essential to know the SSEx guidelines, on the occasion of the initial analysis of procedures and treatments, within the scope of the MHO and RM.

The results described in this study concern the savings resulting from disallowances and renegotiations. However, such savings could have been directly obtained from the respective MR and MHO involved, avoiding rework and possible economic losses.

Under ideal conditions, the request for authorization for MHC or a high-cost procedure should leave from MHO with the OPME quotations and prior audit, leaving the Dsau with the role of reviewing the process and confirming its compliance, authorizing the RG issue to the procedure. Nevertheless, as we observed in the results of this study, the role of DSau in the renegotiations and disallowances of such procedures is very significant.

Aiming to improve this dynamic, allowing the MHO and the MR with DSau to perform with excellence the work of prior and subsequent audits of accounts, we suggest some measures:

1. SSEx has a peculiar characteristic of turning over its workforce because the staff primarily consists of temporary soldiers. Therefore, even the career ones do not remain in the same MHO for many years. In this way, it is a constant challenge to keep teams trained and updated about the proper execution of processes and tasks. Therefore, MHO managers must establish a training routine for teams, emphasizing

- attention to newly arrived militaries. In this sense, the role of the audit head sector and other trained members is crucial in establishing standard operating procedures (SOP) and protocols for many processes involving the team's work, doing periodic reviews, and continuing education.
- 2. Another point is the need to keep the audit teams dedicated to their activity, bypassing functional deviations to avoid the accumulation of attributions, and overload, since it can be a decisive factor for the increase in failures and decrease in the quality of work. Strengthening the relationship between MHO, MR, and DSau is very important for conduct adjustments and harmonization, as this allows optimizing mutual knowledge of activities, enabling the understanding of limitations and opportunities for improvement of each other, providing cooperation and improvement of processes, with a reduction in reworking. One way to promote this closer interaction would be to hold periodic face-to-face meetings or videoconferences between the heads of MHO audit teams, MR Health Inspectors, and DRAS / DSau.
- 3. It is also essential to provide wide dissemination within the teams with the protocols on DSau's website and tools that help to guide the audit. Furthermore, the periodic updating of the protocols is essential for their applicability; therefore, it must be an indispensable initiative of DSau and the BA's technical chambers of medical specialties. DSau should mediate the support of the technical chambers to better guide the decisions of MHO and MR in the prior authorization processes.
- 4. The preparation and updating of databases with indicators, such as OPME prices in the local market, historical series of procedure values, and main reasons for renegotiations and disallowances, among others, are essential measures for the excellent work of several audit teams of SSEx, in its role of advising the management.

Although this study focuses on auditing medical bills, auditing in health is much broader than just accounting. It is also concern to adequacy to standards of quality excellence in assistance. In this sense, a measure that can significantly benefit the quality of the audit work at the SSEx is to bring PASAM closer to the Graduate Course in Auditing in Health Services, as both aims to promote constant improvement in the quality of care for SSEx users.

We cannot forget to point out that the PASAM assessments have served as a subsidy to the evaluated MHO in order to seek and request structural and process improvements by their managers from higher echelons, adjustments in human resources, and new equipment to raise levels of patient safety, quality of care and resolution, which ultimately contributes to the economy and sustainability of the SSEx.

Conclusion

The data collection period corresponds to one year (2021) due to the short-term for the research, which did not allow for drawing a sufficiently reliable profile of values' disallowances historical series, renegotiations, and authorizations for RG in many MRs. Therefore, the theme is far from being exhausted in this work, with space for new studies of similar themes. Although article has focused this the accounting aspect, it is necessary expand BA's view of auditing in health. Looking beyond the health accounts by valuing excellence in caring, which also involves cost optimization and sustainability, is a tagline for SSEx. Finally, the SIRE 2.0 system is currently in an advanced stage of preparation by the Center for Development of Systems of BA (CDS, Centro de Desenvolvimento de Sistemas, in Portuguese), which will bring an entire transformation to the Army audit. For example, it will allow an adaptation to the current language of supplementary health operators, indicators' production, integration between the different BA audit teams, a database of principal's recommended tables, and automation of accounting processes, among other benefits.

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