ORIGINAL ARTICLE

Hospitalizations at Hospital das Clínicas da Faculdade de Medicina de Ribeirão Preto, USP, 1996-2003*

PRODUÇÃO DE INTERNAÇÕES NO HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DE RIBEIRÃO PRETO, USP, 1996-2003

PRODUCCIÓN DE INTERNACIONES EN EL HOSPITAL DE LAS CLÍNICAS DE LA FACULTAD DE MEDICINA DE RIBEIRAO PRETO, USP, 1996-2003

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ABSTRACT

Hospitalizations represent an important share of healthcare, due to both the complexity of actions and the financial volume applied. This descriptive-exploratory investigation had the purpose to identify and describing the physical and financial production of hospitalizations performed in a school hospital in the state of São Paulo, from 1996 to 2003, focusing the specialties of surgical clinic, medical clinic, pediatrics and obstetrics. Data collection was performed by searching the official databanks of the studied institution. In that period, a global 8.5% reduction in the frequency of admittances and a 78.4% increase in the financial resources were observed. Surgical clinic, with more expensive procedures, increased its admittances; the production in obstetrics showed the lowest variation. The increasing incorporation of technology, the demands from regional users and the migration of users from the supplementary system to the SUS may justify the variation of production in the different specialties.

KEY WORDS

Hospitalization.
Single Health System.
Health resources.
Hospital Information Systems.

RESUMO

A produção de internações hospitalares representa importante parcela da atenção à saúde tanto pela complexidade de ações quanto pelo volume financeiro empregado. Esta investigação, de cunho descritivo-exploratório, teve como objetivo identificar e descrever a produção física e financeira de internações hospitalares realizadas em um hospital-escola do interior paulista, no período 1996-2003, nas especialidades de clínica cirúrgica, clínica médica, pediatria e obstetrícia. Os dados foram coletados a partir de consulta a banco de dados oficiais da instituição estudada. No período, houve redução global de 8,5% na freqüência de internações e crescimento de 78,4%, nos recursos financeiros percebidos. A clínica cirúrgica, com procedimentos de maior remuneração, apresentou incremento nas internações; na obstetrícia houve menor variação na produção. A crescente incorporação tecnológica, demanda de usuários da região, migração de usuários do sistema de saúde suplementar para o SUS, podem justifi-car a variação de produção nas diferentes especialidades.

DESCRITORES

Hospitalização.
Sistema Único de Saúde.
Recursos em saúde.
Sistemas de Informação Hospitalar.

RESUMEN

La producción de internaciones hospitalarias representa una importante índice de la atención prestada a la salud, tanto por la complejidad de acciones como por el volumen financiero empleado en ella. Esta investigación descriptiva y exploratoria, tuvo como objetivo identificar y describir la producción física y financiera de internaciones hospitalarias realizadas en un hospital escuela del interior paulista, en el período de 1996 a 2003, en las especialidades de clínica quirúrgica, clínica médica, pediatría y obstetricia. Los datos fueron recolectados a partir de consultas al banco de datos oficial de la institución estudiada. En el período, hubo una reducción global de 8,5% en la frecuencia de internaciones y un crecimiento de 78,4% en los recursos financieros recibidos. La clínica quirúrgica, con procedimientos de mayor remuneración, presentó un incremento en las internaciones; en la obstetricia hubo una menor variación en la producción. La creciente incorporación tecnológica, la demanda de usuarios de la región y, la migración de usuarios del sistema de salud suplementar para el SUS, pueden justificar la variación de producción en las diferentes especialidades.

DESCRIPTORES

Hospitalización.
Sistema Único de Salud.
Recursos en salud.
Sistemas de Información en Hospital.

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INTRODUCTION

The implementation and consolidation of the Single Health System - Sistema Único de Saúde (SUS), associated to the ever-increasing incorporation of new technologies, requires that healthcare professionals have a set of theoretical and technical-operational skills related to the management processes, which will allow them to widen and consolidate new professional spaces by using competent and critical professional practices.

Particularly, the interest in investigating information related to hospitalizations is due to the fact that this segment is highly specialized, consuming a considerable amount of financial resources and having a specific information system in the Ministry of Health, which permits the systemization of the hospitalization control and assessment process, in addition to its representation in the sphere of healthcare services and management.

Another important aspect that justifies the choice of this study regards the particular aspects of the city of Ribeirão Preto – SP, where a part of the healthcare services is managed by the Ribeirão Preto Municipal Health Secretariat – *Secretaria Municipal de Saúde de Ribeirão Preto (SMS-RP),* while the other is supervised by the state, through the 13th Regional Healthcare Board – *Direção Regional de Saúde XIII (DRS-XIII),* including Hospital das Clínicas da Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo (HCFMRP-USP), a well-regarded referral hospital. Therefore, the local healthcare system, made up of services in two distinct healthcare management spheres, requires continuous articulation and communication between its managers in order to provide adequate services to the population, according to the installed capacity of the services and their respective technological density, being organized by a regulatory complex.

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A study developed in Ribeirão Preto – SP, from 1996 to 2003, about the physical and financial production of the hospitalizations in city-managed hospitals showed a distinct yearly variation between the providers and the different medical specialties. Paid hospitalizations increased by 56%; this variation was differentiated among the providers, increasing in some and decreasing in others; the financial values increased by 156.3%. Among the specialties, surgical clinic represented 41.8% of the hospitalizations in the period, with the highest average values of hospitalization authorizations – *Autorização Internação Hospitalar (AIH)*, (R$ 6,963.82)[1].

Knowledge of these data aroused the interest in investigating the hospitalizations at HCFMRP-USP, a tertiary teaching hospital, local-regional referral, with an expressive number of hospitalizations, whose complexity requires its manager to adopt management tools, particularly information, that will permit controlling, assessing, ranking and deciding in order to achieve satisfactory results. Conversely, this hospital is also a referral for the citizens of Ribeirão Preto, and as such, should be considered a part of the service network.

Historically, the insertion of teaching hospitals in the SUS has been one of the challenges to be faced by the system managers, since the situation involving these institutions addresses the definition of their new role in healthcare and education, the relationship with the SUS (insertion, regulation and integration), the organizational and management designs (autonomy, efficiency, efficacy and management) and the financing model.

From the healthcare perspective, the role of these hospitals in the SUS was clearly defined by the Federal Health Council, supported by the Brazilian Association of College and School Hospitals – *Associação Brasileira dos Hospitais Universitários e de Ensino (ABRAHUE),* being predominantly responsible for providing tertiary-level service[2].

However, it is necessary to advance in discussions regarding action planning and partnerships, considering the local-regional healthcare necessities, strengthening the role of the local SUS managers, especially in the implementation of control mechanisms, regulation and assessment at the local level[3].

Therefore, the management process at the local level, especially regarding the actions in the hospital area, assumes objectives beyond the execution of demand-controlling mechanisms, i.e. it requires enhanced assessment processes that consider the socio-demographic and epidemiological profile of the population, the technical-operational skills and conditions of the hospital services, either belonging to the SUS, in partnerships or holding contracts, the qualification of their professionals, among others. These elements demand that local and hospital management produce and use a set of information that will effectively support planning, monitoring and assessment of the healthcare actions developed within the city.

In this enhanced perspective of healthcare system reorganization in Ribeirão Preto, and in the SUS perspective, it is believed that it is possible to answer questions like: What is the amount of hospitalizations per specialty (surgery, medical clinic, obstetrics, pediatrics) and their respective variation between 1996 and 2003? To what extent does the number of hospitalizations (discriminated by specialty) represent the resulting financial amount, registered in the System of Hospital Information – *Sistema de Informação Hospitalar-SUS (SIH-SUS)* in the studied hospital?

It is believed that answers to these questions can contribute to the adequate systematization of the data and

the analysis and interpretation of hospitalization production and expenses, providing the institution manager with support for decision-making. Particularly, it would make information available for the local managers that could contribute for better guidance and monitoring of the organization and performance of the healthcare system in the city.

OBJECTIVE

Identify and describe the physical and financial production of hospitalizations at the HCFMRP-USP, processed by the SIH-SUS, according to the type of specialty, from 1996 to 2003.

METHOD

This descriptive, exploratory and quantitative research was carried out at HCFMRP-USP, a tertiary public teaching hospital according to the information on the record sheet of healthcare institutions. It has two units: HC – Campus, a general hospital with 604 beds which provides services to a referenced demand (patients from the SUS and other healthcare plans) in medical clinic, surgery, obstetrics, pediatrics and psychiatrics specialties, in both inpatient and outpatient regimens; HC – Emergency Unit (UE), a general hospital, which provides services to a referenced demand that is mostly tertiary, comprised of SUS patients in situations of urgency or emergency, with 155 beds in the specialties of medical clinic, surgery, obstetrics, pediatrics and psychiatrics, in inpatient regimen.

The study period of choice is justified because it matches the start of semi-full management in Ribeirão Preto, when the city took over the responsibility for the local management of the healthcare system, including hospitalizations in institutions that had partnerships or contracts with the SUS. This fact represented a reorganization of the local healthcare system. It is worth noting that, although HCFMRP-USP is not under the city management, it is an important local-regional referral hospital, seeing to the demands and attending the healthcare necessities of the population. Therefore, it should be inserted in this context of reorganization of the local healthcare system.

The study population consisted of all hospitalizations processed at the HCFMRP-USP through the SIH-SUS, from 1996 to 2003, in the specialties of medical clinic, surgery, obstetrics and pediatrics.

The documentary research technique was used for data collection, by consulting the databank of hospitalizations, made available by *Grupo Executivo de Convênios* of HCFMRP-USP - GECON (Executive Group of Health Insurance).

Data were collected from the monthly hospitalization reports of and the respective authorized payments in each specialty. Next, they were grouped by year and in categories of interest, such as: number of hospitalizations in the medical clinic, surgery, obstetrics and pediatrics specialties; values paid (in R$) in each specialty per year.

The data were entered, codified and stored in a Microsoft Excel spreadsheet.

Descriptive statistics of the studied variables was used, and the discussion was developed according to the adopted theoretical reference framework – the reorganization of the healthcare system in the city in the SUS perspective.

The study was developed in accordance with the precepts of resolution 196/96 of the National Health Council[4] (File #9822/2006).

RESULTS AND DISCUSSION

In the HCFMRP-USP, 247,534 hospitalizations paid and processed by the SIH-SUS were registered from 1996 to 2003. For purposes of payment, each hospitalization corresponds to one Hospitalization Authorization – *Autorização de Internação Hospitalar (AIH)*, which represents a payment unit instead of a user. This happens because the user may be hospitalized several times over a period, and each of these will have a corresponding AIH. Therefore, AIH means exactly the quantity of payment units provided by the SUS, not the number of hospitalized users.

There was a global reduction of 8.5% in the frequency of hospitalizations in this period, which was more evident after 2000; in 2003, the number of hospitalizations returned to the 2000 levels. As for the financial resources, the amount received by the hospital increased by 78.4% in the period, especially in the years 1997, 1998 and 1999, when a marked financial increase could be observed.

Overall, at HCFMRP-USP, both the physical and the financial variation of hospitalizations was different from those registered in hospitals with partnerships or contracts with the SUS under city management in Ribeirão Preto – SP, which registered a general increase of 56% in paid hospitalizations. Regarding the financial values used to pay for the hospitalizations, these increased by 156.3%[5]. However, when compared to the number of hospitalizations in the country, it can be observed that the physical variation (-1.9%) was higher than what occurred in Brazil as a whole, while the variation in financial values at HCFMRP-USP and in Brazil was similar, increasing by nearly 70%.

It is worth noting that the organization of patient flow to the hospital services in the city of Ribeirão Preto-SP was planned in the second semester of 1999, through adjustments between the HCFMRP-USP, the 17th Regional Healthcare Board (currently DRS XIII) and the Ribeirão Preto Municipal Health Secretariat of, through pre-hospital service actions and the Unified Medical Regulation Central – *Central Única de Regulação Médica (CURM)*[7].

The management reorganization of HC-UE is also worth noting, which had been in progress since 1999, aiming to

adopt a participatory management modality, readaptation of the institutional mission and objectives – an internal process of reorganization and insertion of the hospital in the local healthcare system, since a situation with occupation rates of more than 120% could not be withstood[7].

There are questions on whether the reduction of hospitalizations at the HCFMRP-USP can, in part, be explained by the creation of the CURM and this managerial reorganization of the HC-EU, with part of the demand that had previously received care at the hospital being transferred to hospitals under city management, which increased expressively in the period. Although no direct relationship can be established among the chosen events, it is evident that the local management needs to acquire information that will permit a broadened view of the local healthcare system.

The analysis of the outpatient and inpatient services in the city of Maceió showed that the number of hospitalizations decreased from 1995 to 1998. The hospitalization-per-inhabitant ratio was reduced, probably due to increased amounts of preventive and basic healthcare actions and the implantation of more AIH control and assessment in the city, reducing the number of unnecessary hospitalizations[8].

Figure 1 synthesizes the production of SUS hospitalizations in the different medical specialties in the studied period.

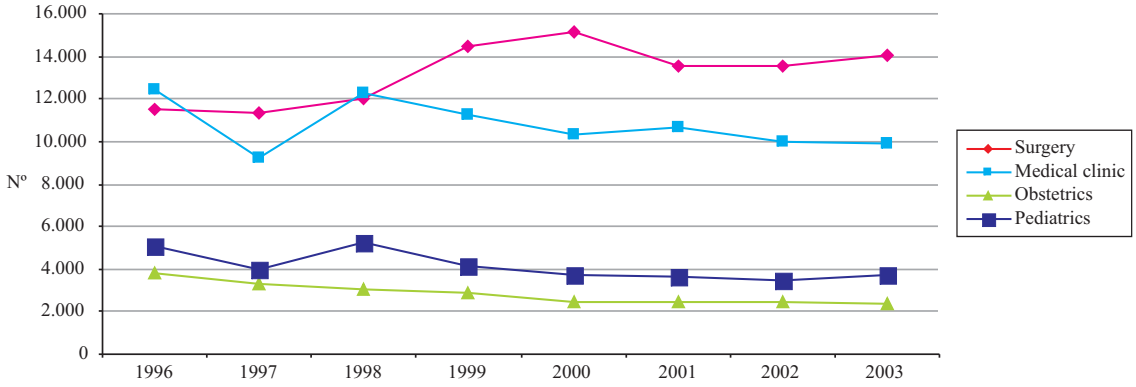

Figure 1 - Physical production of processed/paid SUS hospitalizations, according to the medical specialty. HCFMRP-USP -1996-2003

Regarding financial increments, one of the explanations may be the reorganization of the SIH-SUS table, which has occurred since the late 1990s for specific segments, such as: neurosurgery, ICU, childbirth and neonatal healthcare, urgency and emergency. These areas were selected as priorities by the three government spheres, and are responsible for the positive variation of healthcare expenses [9].

The analysis of the utilization of healthcare services, especially in hospitalizations, is an important topic for Brazil, due to the large volume of resources employed and the proposal of the Single Health System (SUS) to provide services to the whole Brazilian population equally [10].

Financial aspects can influence the increase in hospitalizations, underestimating the real healthcare necessities of the population, and valuating specialties with better remuneration, whose procedures require the incorporation of equipment, materials and technologies, in which the service providers themselves can be more selective for hospitalizations that will represent better revenues, to the detriment of specialties that demand a higher volume of procedures related to the professional healthcare process [1].

Figure 2 shows that the physical and financial variations are different among the following basic specialties of the SIH-SUS: medical clinic, surgery, obstetrics and pediatrics.

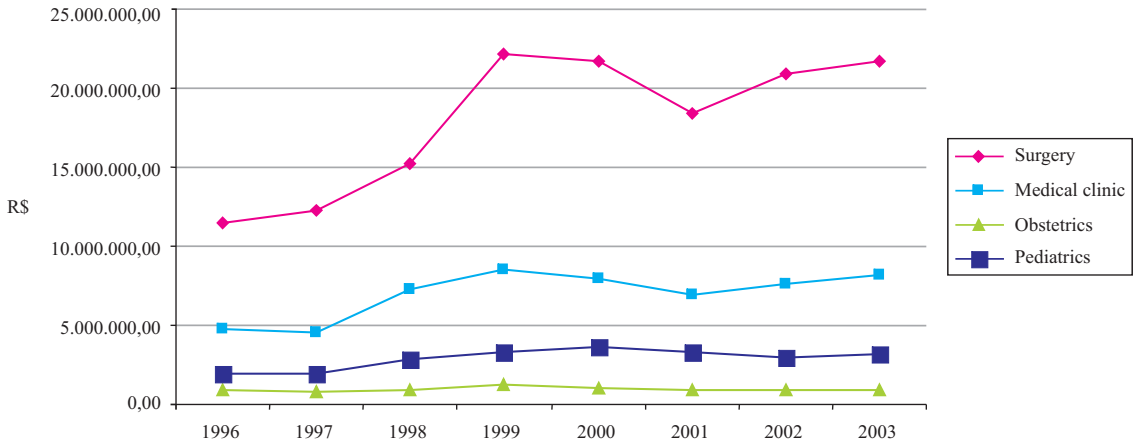

Figure 2 – Financial production of processed / paid SUS hospitalizations, according to the medical specialty. HCFMRP-USP - 1996-2003 (R$1,00 = U$ 0,35, exchange rates in 31/12/2003)

During the study period, 105,616 hospitalizations were paid in the surgical clinic specialty, representing 42.7% of the total AIH paid to the HCFMRP-USP. Therefore, the frequency of hospitalizations increased by 22%, and this specialty was responsible for 62.4% of the total obtained financial resources, increasing by 89.6% in the period.

In the same period, in hospitals under city management, this specialty corresponded to 41.7% of the total AIH paid by the Ribeirão Preto Municipal Secretariat of Health – *Secretaria Municipal de Saúde de Ribeirão Preto (SMS-RP)*, increasing production by 72.4%. Regarding the financial resources, these increased by 153.6%. In Brazil and in the state of São Paulo, the number of hospitalizations increased by 24.1% and 27.5%, respectively[5-6].

One particularity of the surgical clinic is that demand usually cannot receive care in another healthcare level other than the hospital within the healthcare system. In addition, several procedures that belong to this specialty have higher complexity and technological levels than the other specialties. These facts are in agreement with the situation of the studied hospital, which is the local-regional referral institution for high-cost/complexity procedures.

However, the need to regulate the healthcare system stands out, with a view to the rational utilization of the available resources, which eventually implies a detailed monitoring of the production in this specialty, with actions to assess and control the complexity of the procedures performed, so that less complex surgical interventions can be seen to or referred to secondary hospitals.

A large share of the payments for services provided by the SUS are not honored, which penalizes simpler clinical, surgical or laboratory procedures. Comparing payment values from the SIH-SUS table and the table of the Brazilian Medical Association, it is possible to observe in both of these that the surgical procedures are better remunerated, and the clinical treatments/procedures for diseases that are more prevalent in the population, such as heart disease, hypertension and diabetes receive lower remunerations[11].

In this period, 86,131 hospitalizations in the medical clinic were paid, corresponding to 34.8% of the total AIH paid to the studied institution. The number of hospitalizations was reduced by 20.1%, and this specialty was responsible for 24.3% of all financial resources obtained, with a financial increase of 71.1%.

Comparatively, in the same period, this specialty increased the number of hospitalizations by 60.7%, and increased financially by 170.5% in the hospitals under city management. In Brazil and in the state of São Paulo, from 1996 to 2003, the number of hospitalizations in medical clinic decreased by 8.9% and 9.7%, respectively[1,6].

Considering that the paid financial value includes food, lodging, medication, medical services and those from other categories, support exams, diagnosis and therapies, it can be said that the SIH-SUS table favors the remuneration of procedures that employ a higher amount of equipment and other technological devices than actions that are specifically based on care. On the other hand, medical clinic hospitalizations have low remunerations, high medication consumption, possibility of prolonged permanence in the hospital and significant concentration of actions and services in the nursing team, which may imply low financial revenues for hospitals that have partnerships or contracts with the SUS[1].

Results related to the medical clinic specialty, which decreased production when compared to the surgical specialty, can be questioned by considering certain population characteristics, such as: population ageism in the city results in a higher demand of this age group for the specialty, as well as the increase of non-transmissible chronic diseases. Another aspect worth noting in this specialty regards the concentration of procedures that demand an expressive amount of care by healthcare professionals, to the detriment of other resources with higher technological density.

The obstetric clinic specialty was responsible for 22,765 hospitalizations, corresponding to 9.2% of the total AIH paid to the hospital. In the period, the production of hospitalizations decreased by 37.2%, which corresponds to 3.2% of the total financial resources received, and a financial increment of 6%.

In Ribeirão Preto, the hospitals under city management increased their obstetric hospitalizations by 31.5%, whereas the data show a reduction of this specialty in the studied institution. Data about Brazil and the state of São Paulo regarding the obstetrics specialty indicate reductions by 16.1% and 17.3%, respectively[5-6].

One possible explanation for the decreased production in the obstetrics specialty was the insertion of a hospital specialized in obstetrics in the healthcare system in 1998, which led to a reorganization of hospitalization referrals in this specialty, both in hospitals under city management and the hospital under state management. HCFMRP-USP became a referral hospital for care in cases of high-risk pregnancies/deliveries.

The pediatrics clinic registered 33,022 hospitalizations, corresponding to 13.3% of the total paid AIH; the frequency of hospitalizations decreased by 8.5%. Regarding the financial values, this specialty was responsible for 10% of the total AIH resources obtained at HCFMRP-USP, with a 62.6% variation in the amount of financial resources obtained in the period.

In Brazil and in the state of São Paulo, the number of pediatric hospitalizations increased by 10.1% and 13.7%, respectively, and it increased by 31.4% in hospitals under city management[5-6].

Possible explanations for the variation of pediatric hospitalizations in Ribeirão Preto include the changes in the profile of pediatric healthcare provision, due to the incentives towards preventive actions and the form of reorganization of the local healthcare system over a prolonged period, with

changes in the service provided by the basic network and the health policies focused on the child, which changed the morbidity and mortality profile in this population group[1].

The reorganization of the healthcare system and the adoption of differentiated care policies can interfere in the number of hospitalizations. Examples include priority attention to child healthcare, with the adoption of national strategies focused on a vulnerable population group, as a consequence of both particular situations of the growth and development process and the environment this process occurs in. All of this results in inter-sector actions that involve both strict aspects of healthcare and education, rights and citizenship[1].

Therefore, as the results and discussions are present, it can be observed that the number of hospitalizations and the respective amount of financial resources spent justify the detailed monitoring of this production. Figure 3 synthesizes, in percentages, the physical and financial representation of hospitalizations in the medical specialties at the HCFMRP-USP during the studied period.

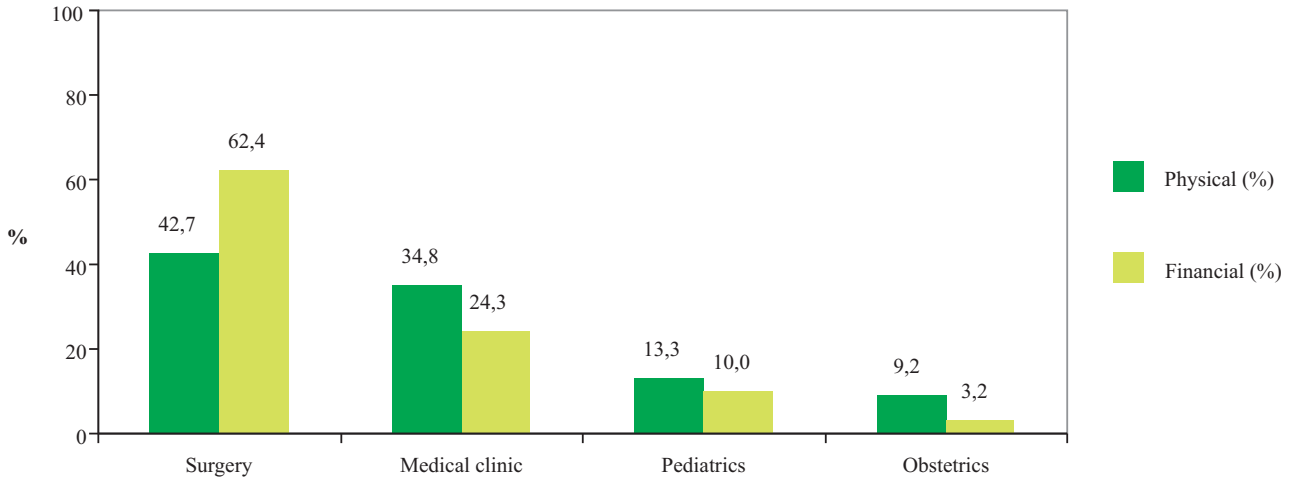

Figura 3 – Physical and financial production (%) of SUS hospitalizations processed/paid by the SIH-SUS, according to the medical specialty. HCFMRP-USP - 1996-2003

During the studied period, healthcare incorporated technological resources related to diagnosis and therapy, such as computerized tomography, magnetic resonance imaging, the use of *stant*, electrophysiological studies in cardiology, multi-site pacesetters, implantation of the SAMU, video-laparoscopy surgeries, among others. Such a situation implies in enhancements in diagnosis, changes in service protocols, changes in the profile of hospitalizations, as well as an assessment of the impact financial investments in technologies represent in the healthcare indicators of the city. Until now, however, the assessment of the impact of technological acquisitions has not been a constant among managers.

Increasing healthcare expenses and the limitations of the funding sources are frequent themes in discussions about the Single Health System, with the issue of rational resource usage to adequately meet the healthcare necessities of the population as an alternative solution for this issue. However, there is still evidence that this problem is not well equated, with a gap between the ideas and healthcare system management routine.

It is relevant to introduce the analysis of economic factors in the healthcare management as a possibility to improve healthcare and the social capacity of seeing to the healthcare needs of the population[12].

Technological advances, the increasing costs of the healthcare services and the acute situation of scarce resources which public services are submitted to confront their managers with the need to use existent resources in the rationally most possible way, accepting that efficiency should become one of the objectives of the organizations[13].

In healthcare institutions, cost-related issues and the economic perspective of the work are important, because resources are frequently scarce[14].

Advances in the incorporation of new healthcare practices and technologies are important; however, differently from other sectors of the productive economy, the offer of technologically more complex resources in healthcare does not overshadow the use of less complex resources. Increasing technological resources could mean higher consumption of financial resources, which do not always have a positive, sustainable and measurable impact in individual and collective health.

FINAL CONSIDERATIONS

Overall, regarding the production of hospitalizations at HCFMRP-USP from 1996 to 2003, it can be stated that such increase was concentrated in the surgical clinic, a specialty with procedures with higher remuneration.

Although data related to Brazil and the state of São Paulo for the studied period point to reductions in hospitalizations, in the studied hospital, this activity has only been increasing in the surgical clinic specialty, and decreasing in the others.

Among the possible hypotheses that could explain the variation in the number of hospitalizations in the period, we note: the demand of users from other cities in the region to use hospital services in Ribeirão Preto; the migration of users from the supplementary healthcare system to the public system; a stricter implementation of the referral and counter-referral system as a regulatory instrument adopted by the public hospital existing in the city, while the same mechanism has not been sufficiently strengthened and supported in the local management for the effective regulation of hospitalizations.

The increasing technological incorporation can justify the financial increase observed in the research. The importance of technological advances is not questioned; however, increasing more comprehensive alternatives involving light technology, different healthcare models, incentives to collective actions that allow for the rational use of the available financial resources and making alternative solutions available are pertinent and adequate for the survival of the healthcare system. Concomitantly, it is necessary to assess the incorporation of new technologies widely, considering the cost-benefit and the healthcare coverage of the population as a whole.

Given the characteristics of the city, with hospital services in two different management spheres, the analysis of the production of hospitalizations requires special attention from managers, both to guarantee the rational use of the available resources and to provide services to the users equally, in order to allow for a broad view of the local healthcare system. The differentiated production among the specialties, especially the medical clinic, requires parallel monitoring of actions, investments and results of prevention and control of non-transmissible chronic diseases programs.

The increasing complexity of the healthcare systems and the acknowledgement that healthcare necessities are inexhaustible demand systematic assessment processes about the relation between the resources used and the provision of services developed. Therefore, the managers need to have/use information that will allow them to respond, at any time, about two basic aspects of their managerial process: how efficiently the services have been performed and what level of efficiency has been attained.

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