

VALE DO JAGUARIBE REGIONAL HOSPITAL: IMPACT ON CEARÁ REGIONAL HEALTH

HOSPITAL REGIONAL VALE DO JAGUARIBE: IMPACTO NA SAÚDE REGIONAL DO CEARÁ

EL HOSPITAL REGIONAL VALE DO JAGUARIBE: IMPACTO EN LA SALUD REGIONAL DE CEARÁ

✉ *Márcia Lúcia de Oliveira Gomes*¹, ✉ *José Pascoal da Silva Júnior*² e ✉ *Mere Benedita do Nascimento*³

ABSTRACT

Health Regionalization is one of the principles of the Unified Health System and a priority for health in the State of Ceará. This study aimed to identify the implementation phases of a hospital in the Vale do Jaguaribe region, Ceará and the impacts on the health of the population. A descriptive, exploratory and transversal investigation was carried out using data from the Outpatient Information System, Hospital Information System and rejection data from this system, both from the Unified Health System and critical reports from the Regulation, Control, Evaluation and Audit Coordination from the Health Department of the State of Ceará. There was a reduction in the demand for care and assistance in other regions, reducing the care gap in this region, strengthening the secondary and tertiary care network, making it more effective and thus minimizing travel to the capital.

Keywords: *Regional Health Planning; Hospital Care; Tertiary Healthcare.*

RESUMO

A regionalização da saúde é um dos princípios do Sistema Único de Saúde (SUS) e prioridade para a saúde no estado do Ceará. Este estudo teve o objetivo de identificar as fases de implantação de um hospital na região do Vale do Jaguaribe, Ceará, e os impactos na saúde da população. Foi realizada uma investigação descritiva, exploratória e transversal a partir de dados do Sistema de Informação Ambulatorial, Sistema de Informação Hospitalar e dados de rejeição desse sistema, ambos do Sistema Único de Saúde, e relatórios de crítica da Coordenadoria de Regulação, Controle, Avaliação e Auditoria da Secretaria da Saúde do Estado do Ceará. Observou-se redução na demanda por atendimento e assistência em outras regiões, diminuição do vazio assistencial nessa região e fortalecimento da rede de atenção secundária e terciária, tornando-a mais resolutiva, e, com isso, evitando os deslocamentos até a capital.

Descritores: *Regionalização da Saúde; Assistência Hospitalar; Atenção Terciária à Saúde.*

RESUMEN

La Regionalización de la Salud es uno principio del Sistema Único de Salud y una prioridad para la salud en Ceará. Este estudio tuvo como objetivo identificar las fases de implementación de un hospital en la región de Vale do Jaguaribe, Ceará y los impactos en la salud de la población. Se realizó una investigación descriptiva, exploratoria y transversal utilizando datos del Sistema de Información Ambulatorio, Sistema de Información Hospitalaria y datos de rechazo de este sistema, tanto del Sistema Único de Salud como de informes críticos de la Coordinación de Regulación, Control, Evaluación y Auditoría del Sistema de Salud. Departamento del Estado de Ceará. Hubo una reducción de la demanda de atención y asistencia en otras regiones, reduciendo la brecha de atención en esta región, fortaleciendo la red de atención secundaria y terciaria, haciéndola más efectiva, minimizando los viajes a la capital.

Descriptores: *Regionalización; Atención Hospitalaria; Atención Terciaria de Salud.*

¹ Coordenadoria da Área Descentralizada de Russas, Limoeiro do Norte/CE - Brasil.

² Coordenadoria da Área Descentralizada de Russas, Limoeiro do Norte/CE - Brasil.

³ Coordenadoria da Área Descentralizada de Russas, Limoeiro do Norte/CE - Brasil.

INTRODUCTION

The regionalization of health is one of the organizational principles of the Unified Health System (SUS) and of great relevance in public health policies. In view of this importance, the state of Ceará sought to work on its regionalization, through Decree No. 7508/2011, strengthening the process of regional decentralization. The organization of health actions and services was strengthened with the expansion of the state health network¹.

This decentralization acted on the need for specialized care and more complex diagnostic procedures, ensuring the doctrinal and organizational principles of the SUS. The regionalization of care supports a large part of the population, especially those who most need attention from the public authorities, according to the principles and guidelines of the SUS¹.

In this sense, through the Modernization Platform, Ceará organized the health system in the regions as a priority action, providing agreements for access to services made between health equipment within the region itself, in order to collaborate to avoid weaknesses in planning and regulation processes. In this way, the public health system becomes more effective and, at the same time, benefits the population through more access to health services, providing humanitarian and efficient care².

The federal, state and local government share responsibility for public health across the country. The government of Ceará has made increasing investments in the area through the creation of a structured and decentralized health network. This network is composed of hospitals, Emergency Care Units (UPA), polyclinics, Dental Specialty Centers (CEO), and Mobile Emergency Care Service (SAMU). The organization of secondary and tertiary care, agreed between the state and municipalities, considers the optimization of resources and problem-solving, aiming to guarantee care to the population in the region of residence.

The government of Ceará aimed to guarantee access to the public health service with the valorization and permanent qualification of professionals in the provision of excellent public health services for the population of Ceará, through innovation and efficiency, integration and universalization of the service network throughout Ceará. Thus, a trajectory of information and services was outlined from primary care units to tertiary units of greater complexity².

The planning for the structuring of the service offered was based on article 7 of State Law 17,006, of September 30, 2019, which provides for the integration, within the scope of the SUS, of health actions and services in health regions in the state of Ceará. It was established that the regional planning of health actions and services should consider: regional health needs; measures to overcome inequalities and the progressive reduction of regional disparities; care gaps; the qualification of the assistance; the public and private health services provided in the region; data from the Health Map; the national and state health guidelines expressed in the national and state health plan and in the health conference guidelines; the development and improvement of regional health information systems and the recording of user data; and strategic state government plans and projects for health, intersectoral articulations and other information of interest to health³.

The paragraph 1 of Federal Decree 7,508, of June 28, 2011, defines a health region as a continuous geographic space consisting of a group of neighboring municipalities, delimited by cultural, economic and social identities and communication networks and shared transport infrastructure, to integrate the organization, planning and execution of health actions and services¹. According to Campos,⁴ the definition of a health region is fundamental for the implementation of health actions and services of the federative entities and the qualification of SUS management, and should be constituted with a sanitary focus not only administrative, but also as the locus of comprehensiveness and problem-solving.

State Ordinance No. 2108/2019, which provides for organizational-operational aspects of health regions, under the terms of State Law No. 17,006/2019, brings in its article 2 the territorial division into five health regions, with the East Coast Jaguaribe being defined as the 5th health region of the state⁵. In this region is located the Regional Hospital of Vale do Jaguaribe (HRVJ), which was planned to ensure the provision of medium and especially high complexity care.

This health equipment has in its structure: urgency and emergency units, outpatient clinic, imaging and diagnostic center, delivery center, surgical center, wards (clinical, surgical, traumatological, obstetric, psychiatric and pediatric), neonatal Intermediate Care Unit (ICU) and neonatal, pediatric and adult Intensive Care Units (ICU), in addition to a space for teaching and research. All of this provides support for the efficient planning of agreed health actions to be developed in the Jaguaribe East Coast Health Region (RSLJ), integrating with priority health care networks with the objective of filling the existing care gaps of medium and high complexity, through the necessary coverage.

The unit is located on the banks of the BR-116 highway, at the junction between the municipalities of Limoeiro do Norte, Russas and Morada Nova, located in the RSLJ, composed of 20 municipalities and with an estimated population of 549,789 inhabitants. 228,234 inhabitants belong to the Decentralized Health Area (ADS) of Limoeiro do Norte, followed by the ADS of Russas, with 202,023 inhabitants, and the ADS of Aracati, with 119,532 inhabitants⁶. It is a strategic location for the objective of decentralizing the health network, allowing the population access to specialized services and reducing the need to travel to the capital, ensuring problem-solving, quality and high technological standards in local care.

The RSLJ stood out with the largest care gaps of medium and high complexity, hence the need for a hospital to support the efficient planning of the health actions to be developed and offer the necessary coverage, reaching the agreements established for the health region according to the care model.

Thus, the study aims to identify the phases of implementation of a hospital in the region of Vale do Jaguaribe, Ceará, and the impacts on the health of the population.

METHOD

This is a descriptive, exploratory, and cross-sectional study that sought to evaluate the services implemented in the HRVJ, how this implementation occurred, what has been

produced, whether by qualified services or not, since its opening, which took place on November 25, 2021, and the impact that this service has had in the region.

The study was carried out at the Regional Hospital of Vale do Jaguaribe, which is located on the banks of the BR-116 highway, at the junction between the municipalities of Limoeiro do Norte, Russas and Morada Nova, located in the East Coast Jaguaribe Health Region, composed of 20 municipalities and with an estimated population of 549,789 inhabitants. This is the 5th health region in the state of Ceará, which is politically and administratively divided into 184 municipalities and 5 health regions and had a projected population for 2024 of approximately 9,390,560 people^{7,8}.

The inclusion criterion for the research was all services provided to SUS users, whether or not this service was enabled in this hospital unit. Data collection took place in January 2024, when data from hospital and outpatient productions of the HRVJ were extracted, including disallowances of non-qualified procedures and hospital morbidity from external causes for the period between November 2021 and October 2023. All data is publicly accessible.

The data collection instrument consisted of Microsoft® Excel® 2019 MSO spreadsheets (Version 2206 Build 16.0.15330.20216), in which the procedures performed were arranged according to the variables that mattered: outpatient procedures performed, hospital morbidity related to external causes with regard to fractures and traumas, procedures rejected by the Hospital Information System (SIH).

The data came from the Outpatient Information System (SIA/SUS), Hospital Information System (SIH/SUS) and critical reports from the website of the Coordination of Regulation, Control, Evaluation and Audit (CORAC) of the Health Department of the State of Ceará (SESA), starting from the inauguration period of the HRVJ^{9,10}. Hospital morbidity related to external causes was used to analyze the trauma-orthopedics service, using the International Classification of Diseases (ICD) morbidity list related to fractures and trauma. To evaluate the services that have not yet been enabled, we used rejection data from SIH/SUS and critical reports from the SESA CORAC website^{9,10}. The CORAC website provides monthly reports of criticism and public consultation, which present, in addition to the informed and approved production, the errors that motivated the dismissals and rejections of production¹⁰. Among the list of errors, it is possible to identify the record of procedures that require services with qualification.

The production data were obtained from the website of the Department of Informatics of the Unified Health System (DATASUS) of Brazil, using two applications that allow searching for data from official sources of the Ministry of Health from the information systems in the SUS, called Tabwin for outpatient and hospital productions, and Tabnet for hospital morbidity, with regard to what was presented by the HRVJ in the SIA/SUS and SIH/SUS, in addition to data from CORAC's critique reports.

It was not necessary to submit it to the Research Ethics Committee (REC) for approval, due to the nature of the research that used secondary data in the public domain. The commitment to make the results of this work public was observed.

RESULTS

The HRVJ was inaugurated on November 25, 2021. Initially, 22 medical clinic beds and 10 ICU beds were offered, as well as outpatient consultations to be defined, and a Diagnostic and Therapeutic Support Service (SADT). However, the imaging park only started operating on December 16, 2021, with the exception of the MRI service, since the room was not completed.

The regional dependence on general adult ICU beds was 100% until 2022, when the first 10 beds were enabled at Hospital São Raimundo, in Limoeiro do Norte, followed by 10 beds at HRVJ.

On May 16, 2022, the hemodynamics service began through interventional cardiology and the offer of magnetic resonance imaging. The hospital offers coronary angioplasty, coronary angioplasty with two *stent* implants, coronary angioplasty with stenting, and primary coronary angioplasty. Although the service is not yet enabled, the production presented by HRVJ was extracted from DATASUS, although it was rejected. Between May 2022 and October 2023, 791 catheterizations were performed, according to CORAC gloss reports, and 380 angioplasties, according to DATASUS rejections.

Regarding the provision of magnetic resonance imaging, in the same period, the HRVJ was responsible for 60% of these exams performed on RSSLJ residents throughout Ceará.

The implementation of the mental health service, with the opening of 08 beds, took place as of September 12, 2022, after adapting them, to be able to offer safety to hospitalized patients. Although it is a general hospital, the HRVJ performed 31% of the psychiatric admissions of RSSLJ residents in the last year, ranking first among the hospitals that received patients in the region in psychiatric beds.

The elective surgery service began on September 21, 2022, with the opening of the general surgical center with 18 surgical clinic beds, later increasing to 30 beds. By October 2023, 1,590 surgeries had been presented, corresponding to 12% of the surgeries performed on RSSLJ residents, ranking first in number of surgeries among the other hospitals in Ceará between January and November 2023.

On August 16, 2023, the trauma-orthopedics urgency and emergency service began with 32 urgent and emergency beds, 30 trauma clinic beds, and 10 ICU beds.

Analyzing hospital morbidity data, using the ICD-10 list of morbidities, using the terms fracture and trauma, during the first quarter of the service's implementation, among the production presented in September 2023, there were 28% of hospitalizations of residents in the region, 41% in October and 46% in November, also occupying the first place in number of hospitalizations among the other hospitals.

On October 25, the oncology service was opened, not allowing analyses because it is a recent service without sufficient data.

Currently, the HRVJ has urgency and emergency units, referring to trauma-orthopedics, outpatient clinic, imaging and diagnostic center, clinical, surgical, traumatological and psychiatric wards, totaling 90 beds for clinics and 32 urgent and emergency beds. It also has 20 adult Intensive Care Unit (ICU) beds, as well as space for teaching and research. With this number of beds, this hospital is considered size IV (which has 100 beds or more), filling the care gap of hospitals of this size in the health

region, because in the study by Silva Junior *et al.*, it was observed that size IV hospitals were not present in the RSSLJ¹¹.

DISCUSSION

With the inauguration of the HRVJ on November 25, 2021, only 22 medical clinic beds and 10 ICU beds were offered. With regard to general adult ICU beds, the regional dependence was 100% until 2022, when the first 10 beds were enabled at Hospital São Raimundo, in Limoeiro do Norte, followed by 10 beds at HRVJ. In 2023, this dependence fell to 59%, and of the hospitalizations carried out within the RSSLJ in its residents, 41% were carried out in the HRVJ. Although repealed, but which presented the parameter in a more objective way, when using Ordinance 1,101/2002, which established 2.5 to 3 general beds per thousand inhabitants, with ICU beds representing 4 to 10% of general beds, it is identified that the need for RSSLJ would be at least 55 beds, showing that it is still necessary to open at least 25 ICU beds¹².

Although both hospitals have the same number of beds, the HRVJ, as it is a tertiary hospital, receives patients of greater complexity, resulting in a longer average length of stay, consequently in a lower turnover of beds.

According to Castro *et al.*, the high demand in health care influences the availability of beds and this results in worsening when it comes to hospitalizations with long stays, and the patient may need a vacancy and not find it¹³.

Interventional cardiology is a subspecialty of cardiology that, through a set of surgical interventional procedures, studies cardiac and arterial hemodynamics, seeking to diagnose and treat heart diseases and arteriopathies. The implanted service diagnoses and treats diseases of the heart and blood vessels via catheters and treats heart valve stenosis, coronary ischemia by clearing the vessel, called angioplasty. The hospital offers coronary angioplasty, coronary angioplasty with two *stent* implants, coronary angioplasty with stenting, and primary coronary angioplasty.

The complexity in the implementation of the HRVJ relies on advanced technological input, specialized human resources, and the activities are being prepared according to a phased implementation plan and with criteria according to regional needs, seeking to ensure the quality of the services offered, cost optimization, guarantee, security and continuity of service.

The care gap in the RSSLJ resulted in the search for care and assistance in other regions, especially in the capital, Fortaleza, with regard to some medium-complexity procedures and procedures and/or exams that are part of high complexity, increasing the Regional Dependency Index (RDI).

The RDI is used to measure the sufficiency and the relationship between the health regions, calculated by the percentage of medium and high complexity hospitalizations in the care of the resident population performed outside their own territories, in relation to the total number of hospitalizations performed for this same population¹⁴.

The identification of these gaps contributed to the indication of strategies for the implementation of the service to be offered by the HRVJ. In this way, the hospital came to reduce the difficulty of access of SUS users residing in RS East Coast Jaguaribe to medium and high complexity services, strengthening regionalization.

CONCLUSION

It was found that the implementation of these services did not occur simultaneously. It started with the medical clinic, ICU, outpatient clinic and SADT, followed by the cardiology hemodynamics service and the magnetic resonance imaging service added to the SAD. Subsequently, the psychiatry beds were opened, followed by the provision of elective surgeries, and more recently we had the urgency and emergency service of trauma-orthopedics and oncology.

The care gaps already filled were related to practically all open services, with the exception of the medical clinic, since it is the main offer in the other hospitals of the RSLJ, and thus this impact was not much evidenced in quantitative terms, as well as the surgery service, which, although it is not a previously existing care gap. There was a significant expansion of the offer.

The positive impact of the HRVJ presented in the study was not only in the reduction of care gaps, but also in the expansion of access and overcoming geographical barriers. ICU dependence increased from 100% to 59%, with 41% of these admissions being carried out at the HRVJ. Cardiological hemodynamics had its dependence reduced from 100% to 64%; magnetic resonance imaging from 100% to 40%; psychiatric beds from 100% to 69%; traumatology 41% in general, from 100% in high complexity to 29% in general, in one quarter of operation, with a gradual monthly increase. The oncology service, because it was recently implemented, and since there was no historical series that would allow an evaluation, it was not possible to identify the impact.

Therefore, the HRVJ came to meet the health needs of the population, strengthening the secondary and tertiary care network, making it more resolute, and, therefore, reducing travel to the capital.

The limitations of the study lie in the recording of the information, since the data were extracted from information systems and, therefore, only the records presented to the Ministry of Health were considered. Any typing errors, glosses or uninformed procedures were not considered, with the exception of hemodynamics, whose data were extracted specifically from the glosses, since the service is not enabled. As for the potentialities, this study allows a view of the current situation of the HRVJ and signals the needs and projections for improvements.

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