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Applicability of Public Funds in Health Care in the State of Tocantins: A Study of the Indicators

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Abstract: *This research examines the utilization of the State Treasury's revenues for Medium- and High-Complexity Health Actions and Services (MAC) in Tocantins from 2020 to 2025. The study is warranted by the escalation of healthcare costs and the challenges encountered by administrators in executing public policies, aiming to provide evidence-based insights for local health finance decisions. Aim: To evaluate the utilization of the state's own revenues for medium- and high-complexity healthcare; to juxtapose federal SUS expenditures with state-funded allocations at this care level; and to ascertain total per capita spending by comparing overall health expenditures with those financed by the state's own revenues. Methodology: This research used a case study design with a descriptive framework, carried out in the Tocantins State Department of Health in Palmas. Data were gathered by documentary analysis and information systems, encompassing management reports from SIAFEM and databases from the SUS health information systems, provided by the Directorate of Management and Strategic Monitoring. The findings are displayed in diagrams, tables, and graphical representations. Outcomes and Conclusion Observations: The research contextualizes health finance within the SUS framework and investigates the distribution of governmental resources allocated via the State Health Fund for medium- and high-complexity services. The comparative examination of state and federal funding aims to evaluate the hypothesis that Tocantins has been augmenting federal resources, surpassing the federal funding limit for outpatient and hospital services, indicating a substantial constraint in federal financing at this complexity level.*

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I. Introduction

This research investigates the utilization of the state's own financial resources for health initiatives and services in Tocantins, driven by the increase in spending in this sector and the challenges faced by health policy administrators. The topic holds significant relevance for comprehending the dynamics of local health financing, aimed at equipping management with the essential knowledge for informed decision-making.

The study sought to evaluate the fiscal use of the State Treasury's own income for the implementation of medium- and high-complexity health initiatives and services (MAC) in Tocantins from 2020 to 2025. It subsequently contrasted federal SUS expenditures with state-funded investments in actions and services of similar complexity under state administration, and determined per capita spending by juxtaposing total outlays with those financed by the state's own health revenues.

The study was conducted in 2020 at the Department of Health in the State of Tocantins, located in the capital city, Palmas. A case study methodology was employed, concentrating on a thorough and comprehensive examination of health financing within the state management framework of the Unified Health System (SUS), as this is practical research aimed at producing knowledge to address particular issues.

Data were gathered via information systems and via documentary analysis. The examined documents were located at the Directorate of Management and Strategic Oversight. Management reports regarding the budgetary and financial performance of the Department of Health in the State of Tocantins were acquired from the databases of the Financial Administration System for States and Municipalities (SIAFEM) — the technological instrument employed for the budgetary, financial, and accounting operations of the State Health Fund. The databases of the SUS health information systems were additionally utilized.

In alignment with the descriptive nature of the study, the information is displayed through charts, tables, and graphs. The examination commences by contextualizing health care within the parameters of the Unified Health System (SUS), subsequently investigating the funding of medium- and high-complexity health initiatives and services via the financial resources designated for the State Department of Health and funneled through the Health Fund, utilizing a theoretical framework that underscores specific conceptual and legal aspects related to health financing within the SUS context.

Ultimately, the research juxtaposes the utilization of health resources by both the state and federal authorities, chronicling financial allocations during the specified timeframe and providing suggestions derived from the findings. The objective is to evaluate the premise that the State of Tocantins has been augmenting federal funding, exceeding the federal budget limit for outpatient and hospital services, thereby exposing a considerable constraint in that funding.

II. Methodology

THE CHALLENGE OF FINANCING PUBLIC HEALTH CARE: CONCEPTUAL AND LEGAL FOUNDATIONS

Financing is an attribute of the economic and financial dimension of fundamental importance to the management of Brazilian public health care, the SUS, whose guarantee is embedded in the context of basic and universal rights of citizenship — the rights to health, social assistance, and social security — secured by the Federal Constitution of 1988, which establishes that the financing of health care is a shared responsibility of the three levels of government, to be carried out as follows:

"(…)

Article 198.

§ 1. **The unified health system shall be financed, under the terms of Article 195, with resources from the social security budget of the Union, the States, the Federal District, and the Municipalities, in addition to other sources.** (Sole paragraph renumbered as § 1 by Constitutional Amendment No. 29 of 2000)

(…)".

What is sought for the SUS, therefore, is financing adequate to the functioning of public health service structures in a way that secures the right to social protection. In this context, according to Barbosa [1], financing

> "**must be understood both in terms of the adequacy of funding (the volume of resources applied to health care and on equitable bases — resources in sufficient volume for hospitals to function) and in terms of the sources and origins of those resources (whether public or private, and for which items precisely), as well as the payment modalities applicable to services, taking into account the implicit incentives and the potential advantages and risks of each modality. Through these definitions, this attribute must enable the sustainability of the enterprise (the generation of economic equilibrium, including demands for leverage or investment in the organization), grounded in the logic of resource maximization (efficiency), while respecting the dimension of quality of care.**"

Moreover, within the SUS, financing is treated as one of the managerial functions in health care, "**because it forms part of the articulated set of managerial knowledge and practices required for implementing health policies, which must be exercised in a manner consistent with the principles of the public health system and of public administration**" [2].

In a recent work, Machado, Lima, and Baptista [2] outlined the principal responsibilities of SUS managers with respect to financing, as summarized in Chart 01.

Chart 01: Summary of the responsibilities of SUS managers regarding financing.

Management Function	Federal	State	Municipal
Financing	1. Pursuit of equity in resource allocation. 2. Definition of national priorities and of criteria for investment and allocation across policy areas and across regions/states. 3. Guarantee of stable and sufficient resources for the health sector. 4. Redistributive role. 5. Substantial weight of federal resources. 6. Investment aimed at reducing inequalities.	1. Pursuit of equity in resource allocation. 2. Definition of clear criteria for allocating federal and state resources across policy areas and across municipalities. 3. Definition of state priorities. 4. Guarantee of the allocation of the state's own resources. 5. Investment aimed at reducing inequalities.	1. Clear criteria for applying federal, state, and municipal resources. 2. Guarantee of the application of the municipality's own resources. 3. Investment at the municipal level.

Source: Machado; Lima and Baptista (2024).

Chart 01 shows that two responsibilities are common to the federal and state levels of management: the pursuit of equity and the definition of clear criteria for allocating resources on the basis of health needs, complemented by investment aimed at reducing inequalities, a responsibility shared by all three levels. States and municipalities are required to allocate their own resources.

In the period following the 1988 Constitution, however, what can be observed is a crisis in health financing on the part of the federal government, as Machado, Lima, and Baptista [2] argue:

> **"…responsibility for health financing, according to the legislation, is to be shared by the three spheres of government. The legal definition of a social security budget, the characteristics of the tax system, and the inequalities of the Brazilian federation all underscore the importance of federal financing in health care. Indeed, the weight of the federal government in health financing remains significant, even though the relative share of the federal sphere in public health spending declined over the course of the 1990s, while the relative share of municipalities increased. There has been a progressive rise in direct federal transfers to state and municipal managers for the funding of SUS actions and services, so that these managers have come to exercise greater responsibility over the execution of federally sourced resources. A large share of these transfers, however, is conditional or earmarked for specific actions and programs, which restricts the discretion of subnational managers over total resources. Managers in all three spheres of government are responsible for making investments that, in general, have not been sufficient to reduce health inequalities."**

In this context, the innovations in the field of financing were Constitutional Amendment No. 29 (EC 29), enacted to **"secure minimum resources for the financing of public health actions and services**" [3], and its regulation through Complementary Law No. 141 of January 13, 2012, which defined what counts as health expenditure that may be financed from health budgets in the three spheres of government [4]. The minimum budgetary and financial percentages already established by EC 29 were nonetheless maintained, so that no "new money" was secured — the same bases were kept for the Union as well as for states and municipalities. Under the terms of EC 29 of September 13, 2000 [3]:

> "**The states shall allocate to public health actions and services an amount equivalent to 12% of the revenue collected from taxes. Municipalities shall allocate 15%. From 2001 to 2004, the Union shall allocate the amount ascertained in the previous year, adjusted by the nominal variation of Gross Domestic Product (GDP)".**

Under Complementary Law No. 141 [4]:

> **"(…)**

> **Article 5. The Union shall apply annually to public health actions and services an amount corresponding to the sum committed in the previous fiscal year, ascertained under the terms of this Complementary Law, increased by at least the percentage corresponding to the nominal variation of Gross Domestic Product (GDP) in the year preceding that of the annual budget law.**
> **(…)".**

Article 3 of Complementary Law No. 141 [5] defines what shall be considered expenditure on public health actions and services. Of particular relevance to the present study are items II and X:

> **"(…)**
> **II — comprehensive and universal health care at all levels of complexity, including therapeutic assistance and the treatment of nutritional deficiencies;**
> **X — remuneration of active health personnel engaged in the actions covered by this article, including social charges;**
> **(…)".**

The transfer of federal resources earmarked for public health actions and services is to be carried out through automatic transfers to the States, Municipalities, and the Federal District [6], and these are currently aggregated into financing blocks [7]:

> "**The Health Pact altered the way the SUS is financed by eliminating more than one hundred modalities of resource transfer and reducing them to only six blocks" [8].**

Further, according to Ferraz [8]:

> **"The calculation bases that make up each Block and the financial amounts allocated to states, municipalities, and the Federal District shall be composed of calculation records for purposes of historical tracking and monitoring. States and municipalities will thus have greater autonomy in allocating resources in accordance with the targets and priorities established in their health plans."**

The SUS Financing Blocks were established by Ministerial Ordinance GM/MS No. 204 of January 29, 2007 [7], namely:

- Primary Care Block;
- Medium- and High-Complexity Care Block;
- Health Surveillance Block;
- Pharmaceutical Assistance Block;
- Management Block;
- Block for Investment in the Health Service Network.

> "**In addition to 'fund-to-fund' transfers, states and municipalities may also qualify to receive resources directed toward specific objectives by means of agreements (convênios), which are transfers of financial resources specifically provided for in the Union's Fiscal and Social Security Budget. These are aimed at specific objectives related to the execution of projects, activities, services, the acquisition of goods, or events of mutual interest in cooperation between the Union and the applicant** (or proponent)" [9].

> **"Likewise, in the case of resources allocated to the Health Fund by way of a parliamentary amendment — that is, resources earmarked at their origin in the Union's Budget by the Legislature — it is necessary to follow the procedures established by the National Health Fund, such as registering the proposal in the Management System for Agreements and Transfer Contracts** (Siconv)" [9].

There remains, nonetheless, the challenge for public health managers of understanding and knowing how to handle the subject of financing, traditionally addressed only by economists and accountants [9]. The topic is essential to making health policies viable and sustainable at the federal, state, and municipal levels, particularly in confronting the factors universally recognized as drivers of rising health expenditure, which are advancing far

more rapidly today: population aging, the incorporation of new medical technologies, and the judicialization of health care.

THE STATE OF TOCANTINS IN THE CONTEXT OF THE UNIFIED HEALTH SYSTEM

The history of public health in Tocantins begins with the creation of the state and of the Unified Health System (SUS) in 1988, when, following its separation from the State of Goiás, Tocantins became part of the Legal Amazon and of Brazil's North Region. The physical infrastructure for care and surveillance inherited by Tocantins consisted of only 26 health facilities with which to deliver health actions and services [10].

Tocantins thus came into being already bearing the responsibility of building a public health system grounded in the constitutional principles and guidelines of universality, comprehensiveness of care, decentralization, and social participation, and facing the challenge of organizing a regionalized and hierarchical network of health actions and services [10]. As in other areas of public policy, an entire physical network of facilities, equipment, human resources, and health services had to be built and deployed, and it remains in the process of consolidation and structuring within the state [11].

The process of building the SUS passed through several stages and challenges over its twenty-five years of existence in the state [11]. The difficulties encountered in carrying forward decentralization — particularly with respect to the availability of resources — led the state, from the mid-1990s onward, to prioritize the strengthening of decentralization in Primary Care and Health Surveillance, with the challenge of implementing the Community Health Agents Program (ACS), the Family Health Strategy (SF), and Oral Health (SB) strategies, and of institutionalizing Health Surveillance [12].

The health situation in the state reveals both health and management problems, with challenges that must be addressed [13]. The indicators presented below describe that situation and the prospects for action in the coming years that are relevant to management, as inferred from the documentary analysis of the Tocantins State Health Plan 2020–2025 [13].

According to the 2010 IBGE census [14], 57.6% of the state's municipalities have fewer than 5,000 inhabitants and 91.2% have fewer than 20,000 inhabitants — that is, 128 of the state's 139 municipalities. The population of the North Region accounts for 8.02% of the Brazilian population [14]. Tocantins accounts for 0.67% of Brazil's population and 8.41% of that of the North Region [14]. The state has a low population density of 4.65 inhabitants/km², which makes the regionalization of health actions and services a necessary premise [14].

Brazil's population pyramid shows a narrowed base in the 0–9 and 10–19 age groups, reflecting a decline in birth rates in recent years comparable to that of developed countries [14]. This pattern is not observed in the population pyramid of the North Region, whose base retains the characteristics of a young population [14]. Although Tocantins shares this characteristic, it already displays a narrowing of the base in the 0–9 age group, indicating a trend toward convergence with the Brazilian population pyramid [14].

In every age group in Tocantins the male population exceeds the female population, with the exception of the 80-and-over age group [14].

In Tocantins, 93.5% of the population relies exclusively on the universal-access system, according to data from the National Supplementary Health Agency (ANS) (SIB/ANS/MS, December 2012) [15]. In Brazil as a whole this figure is only 28.6%, even though more than 90% of the population are SUS users [15].

The leading causes of mortality in the state are diseases of the circulatory system, followed by external causes (violence, accidents, and trauma) and neoplasms (cancer) [16]. The state currently faces a bottleneck in medium-complexity care, caused by the reduced supply of specialized consultations, diagnostic tests, and elective surgeries, which in turn increases emergency demand and worsens patients' health status [13]. The rise in cardiovascular and endocrine disease (arterial hypertension and diabetes), in hospitalizations and recovery from external causes (accidents, violence, and assault), and in cancer has driven demand upward [16].

The Family Health Strategy (ESF) is designed primarily to organize health care delivery at the primary level and to serve as the gateway to the health care network [17]. Between 2020 and 2025, the State of Tocantins recorded

population coverage rates per team higher than those of the other states of the North Region considered individually, and higher than the national figure — see Table 01 [13].

Strengthening primary care in Tocantins entails the continuing challenge of expanding services, coupled with the qualification, technical support, follow-up, monitoring, and evaluation of the Family Health Strategy [18]. The aim is not merely to increase the number of teams but to improve the quality of actions and services across the life cycle (men, adolescents, women, children, adults, and older adults), thereby ensuring care and health promotion for the families of Tocantins and reducing hospitalizations, particularly those for ambulatory care–sensitive conditions [18].

Table 01 — Family Health Strategy (ESF) Coverage Rate.

	2020	**2021**	**2022**	**2023**	**2024**
Brazil	59.46%	60.54%	64.83%	59.58%	62.15%
North Region	73.93%	74.28%	74.42%	65.61%	68.56%
Tocantins	99.90%	98.42%	93.96%	89.99%	82.67%
Pará	70.31%	74.81%	78.47%	64.37%	69.74%
Amazonas	71.06%	63.15%	60.05%	57.77%	56.78%
Rondônia	65.71%	71.17%	66.85%	65.85%	70.38%
Acre	86.28%	91.30%	87.05%	86.38%	85.79%
Roraima	72.72%	72.81%	70.90%	69.14%	68.51%
Amapá	85.79%	68.12%	69.10%	44.67%	64.38%

Source: MS/SAS/DAB and IBGE, 2025.

The declines recorded in ESF coverage between 2020 and 2025 may be explained by the shortage of physicians for primary care [19].

Within the Medium- and High-Complexity Outpatient and Hospital Care Network, significant progress has been made over the twenty-five years of the SUS in the State of Tocantins [20]. New services were introduced so that high-complexity care could be strengthened in the delivery of specialized services in two regions — Palmas and Araguaína — which are for that reason the most significant at present, and where the services shown in Charts 02 and 03 are available [21]. Forty-two medical specialties are currently offered at both the Palmas General Hospital (HGP) and the Araguaína Regional Hospital, and twenty at the Dona Regina Hospital and Maternity Center [21].

Chart 02: High-Complexity Services in Palmas — Capital of Tocantins.

Outpatient Services	**Hospital Services**
1. Hemotherapy	1. High-Risk Pregnancy
2. Lithotripsy	2. Bariatric Surgery
3. Hemodynamics	3. Reconstructive Plastic Surgery
4. High-Complexity Oncology Care Unit (UNACON)	4. Vascular Surgery
5. Radiodiagnosis	5. Neurosurgery, Level I
6. Renal Replacement Therapy (RRT)	6. Orthopedics
7. Computed Tomography	7. Urgent and Emergency Care
8. Magnetic Resonance Imaging	8. Adult, Pediatric, and Neonatal ICU
	9. Cardiac Surgery
	10. Oral and Maxillofacial Surgery

Source: Evaluation Coordination Office / SESAU.

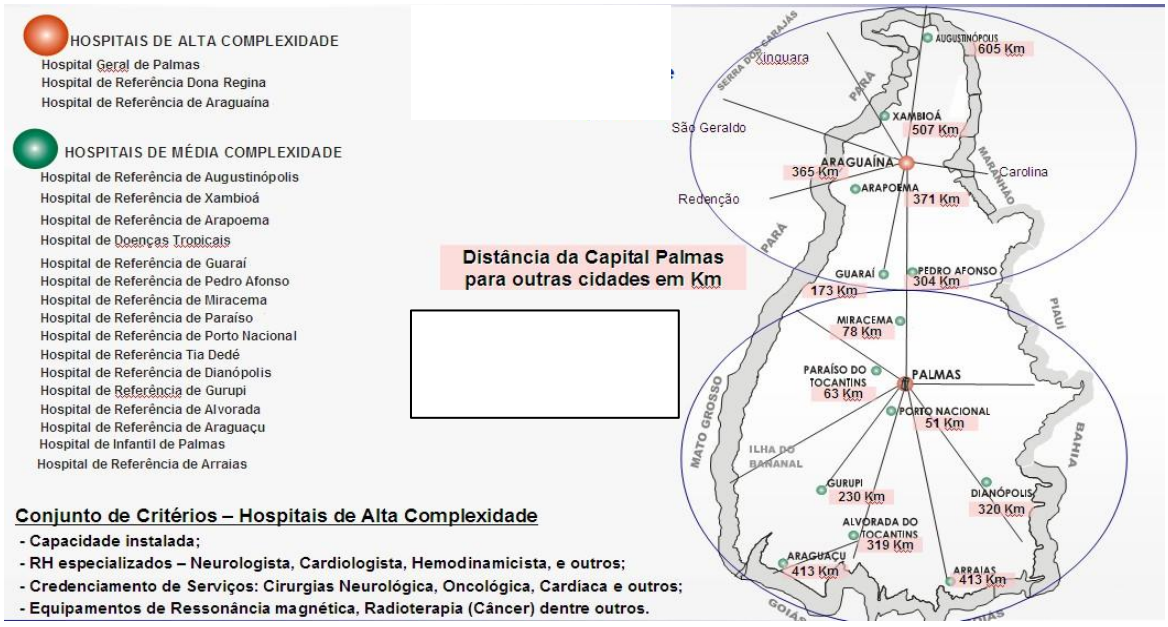
Chart 03: High-Complexity Outpatient and Hospital Services in Araguaína, Tocantins.

Outpatient Services	**Hospital Services**
1. Lithotripsy	1. Bariatric Surgery
2. Hemotherapy	2. Oral and Maxillofacial Surgery
3. Aesthetic and Functional Rehabilitation of Malformations	3. Cardiac Surgery
4. Chronic Pain Management	4. Oncologic Surgery
5. Hemodynamics	5. Reconstructive Plastic Surgery
6. Bone Densitometry	6. Vascular Surgery
7. Oncology — CACON I	7. High-Risk Pregnancy
8. Radiodiagnosis	8. Neurosurgery, Levels I and II
9. Renal Replacement Therapy (RRT)	9. Orthopedics
10. Computed Tomography	10. Psychiatry
11. Magnetic Resonance Imaging	11. Burn Care, Level I
	12. Urgent and Emergency Care
	13. Urgent and Emergency Care, Type III
	14. Adult, Cardiac, Pediatric, and Neonatal ICU, Type II

Source: Evaluation Coordination Office / SESAU.

Figure 01 presents the Map of State-Managed Outpatient and Hospital Services, characterizing the medium- and high-complexity hospital network, which is responsible for more than 85% of admissions across the entire referral population — the population of the state itself, southern Pará, and southern Maranhão — according to data from the Outpatient Information System and the Hospital Information System of the Unified Health System (SIA-SIH/SUS) [22].

Figure 01 — Map of State-Managed Outpatient and Hospital Services by Level of Complexity, Tocantins, 2025.



The services provided by these hospitals comprise medium- and high-complexity care, the levels of health care recognized within the SUS [23]:

> **"Medium-complexity care comprises actions and services intended to address the population's principal health problems and conditions, the clinical management of which requires the availability of specialized professionals and the use of diagnostic and therapeutic support technologies. Medium-complexity care was established by Decree No. 4,726 of 2003, which approved the organizational structure of the Ministry of Health. Its responsibilities are set out in Article 12 of the proposed internal bylaws of the Secretariat of Health Care. The groups comprising medium-complexity procedures in the Outpatient Information System are the following: (1) specialized procedures performed by physicians and by other professionals holding higher-education and secondary-education credentials; (2) specialized outpatient surgeries; (3) trauma and orthopedic procedures; (4) specialized dental procedures; (5) clinical pathology; (6) anatomical pathology and cytopathology; (7) radiodiagnosis; (8) ultrasound examinations; (9) diagnostic testing; (10) physical therapy; (11) specialized therapies; (12) prostheses and orthoses; and (13) anesthesia".**
>
> **"High-complexity care is the set of procedures that, within the SUS, involve advanced technology and high cost, and that aim to provide the population with access to qualified services, integrating them with the other levels of health care (primary and medium-complexity care). The principal areas comprising high-complexity care in the SUS, organized into 'networks,' are: care for patients with chronic kidney disease (through dialysis procedures); oncology care; cardiovascular surgery; vascular surgery; pediatric cardiovascular surgery; interventional cardiology procedures; extracardiac endovascular procedures; electrophysiology laboratory services; trauma and orthopedic care; neurosurgical procedures; otologic care; cochlear implant surgery; surgery of the upper airways and the cervical region; surgery of the cranial vault, the face, and the stomatognathic system; procedures for cleft lip and palate; prosthetic and functional rehabilitation for disorders of the cranial vault, the face, and the stomatognathic system; procedures for the assessment and treatment of sleep-related breathing disorders; care for burn patients; care for patients with obesity (bariatric surgery); reproductive surgery; clinical genetics; nutritional therapy; progressive muscular dystrophy; osteogenesis imperfecta; cystic fibrosis; and assisted reproduction. High-complexity procedures are listed in the SUS schedule, for the most part within the SUS Hospital Information System; a small number also appear in the Outpatient Information System, but with an extremely high financial impact, as is the case with dialysis, chemotherapy, radiotherapy, and hemotherapy procedures" [23].**

In addition to hospital services, the Blood Supply Network (Hemorrede) and Out-of-District Treatment (TFD) services are also managed directly by the Department of Health [23]. The Tocantins Hemorrede is responsible for supplying blood components and blood products to the state's principal public and private hospitals, as well as for providing outpatient services [23]. TFD covers the cost of transporting SUS users for treatment outside their municipality of residence [23].

Hospital care in the State of Tocantins displays a profile consistent with the guidelines of the Federal Constitution, being delivered primarily by the public sector and, on a complementary basis, by philanthropic institutions: 94.15% of the beds registered with the SUS are located in public hospitals and only 5.85% in private institutions contracted by the SUS, as shown in Chart 04 [24].

Chart 04: Profile of Hospital Care in the State of Tocantins

LEVEL OF HOSPITAL COMPLEXITY	LEVEL OF MANAGEMENT	NUMBER OF HOSPITALS	CATCHMENT AREA	NUMBER OF BEDS
Medium and High Complexity	State	18	Regional	1,467
Small-Sized	State	01	Regional	
Small-Sized	Municipal	22	Municipal	179
Low Complexity	Municipal	10	Municipal	365
Medium and High Complexity	Private / Philanthropic	01	Regional	125
TOTAL	–	**53**	–	**2,136**

Source: CNES/2013 — Updated November 2025: MAC Hospital Care Supervision Office/DAE/SESAU-TO.

An analysis of Charts 04 and 05 indicates that the State of Tocantins is the largest provider of hospital care and is therefore responsible for maintaining and operating 1,467 beds, of which 1,310 are general inpatient beds, 51 are intermediate care unit beds, and 106 are intensive care unit beds, distributed across nineteen hospitals (eighteen medium- and high-complexity facilities and one small-sized hospital) [25]. Accordingly, 68.68% of all beds registered in the state are managed through the direct administration of the Department of Health of the State of Tocantins [25].

Chart 05 lists the hospitals under state management and administration: nineteen facilities located in fifteen different municipalities, of which three concentrate high-complexity services (the Palmas General Hospital and the Dona Regina Maternity Hospital, both in Palmas, Tocantins, and the Araguaína Regional Hospital, in Araguaína, Tocantins); sixteen concentrate medium-complexity services; and one is a small-sized hospital [26].

Chart 05: Total SUS Inpatient Beds in Public Regional Hospitals — State Management.

HOSPITAL FACILITY	YEAR OPENED	SIZE	IBGE POPULATION 2010	GENERAL INPATIENT BEDS
1. Arraias Regional Hospital	1992	I	10,643	40
2. Arapoema Regional Hospital	1995	I	6,742	28
3. Araguaçu Referral Hospital	1991	I	8,786	29
4. Pedro Afonso Regional Hospital	1993	I	11,542	32
5. Xambioá Regional Hospital	Pre-1988 (1982)	I	11,484	30
6. Araguaína Tropical Diseases Hospital	1989	II	150,520	54
7. Augustinópolis Regional Hospital	Pre-1988 (1983)	II	15,965	95
8. Dianópolis Regional Hospital	1993	II	19,110	47
9. Guaraí Regional Hospital	Pre-1988 (1981)	II	23,212	55
10. Miracema Regional Hospital	1993	II	20,692	69

HOSPITAL FACILITY	YEAR OPENED	SIZE	IBGE POPULATION 2010	GENERAL INPATIENT BEDS
11. Palmas Children's Hospital	2010	II	228,297	32
12. Paraíso Regional Hospital (1997)	1997	II	44,432	70
13. Porto Nacional Regional Hospital	Pre-1988 (formerly OSEGO Hospital of Goiás)	II	49,143	76
14. Tia Dedé Maternal and Child Hospital	2005	II	49,143	50
15. Araguaína Regional Hospital	Pre-1988	III	150,520	203
16. Gurupi Regional Hospital	1989	III	76,765	94
17. Palmas General Hospital (H.G.P.)	2005	III	228,297	211
18. Dona Regina Maternity Hospital	1999	III	228,297	75
19. Alvorada Small-Sized Hospital (HPP)	2006	HPP	8,380	20
TOTAL BEDS				**1,310**

Source: CNES/2025 — Updated November 2025, MAC Hospital Care Supervision Office/DAE/SESAU-TO.

It may also be inferred that the direct provision of hospital care by state management stems from the challenges of regionalization in the health sector [27]. For a municipality to manage a health facility located within its territory that serves an entire referral region and is designed around the epidemiological profile, it must not only take part in a negotiated agreement process but also be organized and have secured significant gains in the negotiation and allocation of physical and financial resources, so as to make it feasible to serve not only its own residents but the entire population of the region [27]. This negotiation process, which consolidates the coherence of health regions, remains incipient owing to the lack of the investment required for its implementation, as well as to the absence of adequate methodologies for financing health actions and services within the territory on a shared (solidary and cooperative) basis [27]. It was nonetheless agreed within the CIB-TO (Bipartite Interagency Commission of the State of Tocantins) that the State of Tocantins is responsible for the management and administration of medium- and high-complexity hospital care, thereby reducing the barriers that impede users' access to the health service system [28].

According to data obtained from the Regional Management Collegiate document, Tocantins (2011) [29], health regionalization in the state was established in 2020 through a Regionalization Master Plan (PDR) comprising 15 regions and 2 macroregions, following extensive discussion in light of the Health Pact and approval by the Bipartite Interagency Commission (CIB-TO) [28]. The configuration of these health regions was established using a cutoff point at the care-delivery level, which determined that, in order to be constituted and approved by the CIB, health regions had to have at minimum: 80% primary care coverage, health surveillance, obstetric ultrasound, an M1 laboratory, X-ray services, and an urgent care unit [28]. The regions were classified as having minimum, intermediate, or advanced sufficiency [28]. These health regions were defined following extensive debate in Regionalized Health Pact Workshops held in late 2019 and early 2020 — eight three-day workshops were conducted with the participation of municipal managers and technical staff, state managers and technical staff, Ministry of Health technical staff, and members of the State Health Council of Tocantins, who assessed the state's socioeconomic, demographic, and geographic characteristics on the basis of its epidemiological profile and its health actions and services [28]. The outcomes were the Regionalization Master Plan (PDR); the Regional Management Collegiates (CGR); and intensified adherence by municipalities to the Health Pact [28].

In 2008, fifteen health regions and two macroregions — Palmas and Araguaína — were constituted, altering the configuration then in force of 20 module headquarters and 6 microregional headquarters [30].

Federal Decree No. 7,508 of June 28, 2011, which "regulates Law No. 8,080 of September 19, 1990, to provide for the organization of the Unified Health System (SUS), health planning, health care delivery, and interfederative coordination, establishing that these must occur on a regionalized and hierarchical basis," currently defines a health region as "the continuous geographic space constituted by a grouping of contiguous municipalities, delimited on the basis of cultural, economic, and social identities and of shared communication networks and transport infrastructure, for the purpose of integrating the organization, planning, and execution of health actions and services" [31].

That Decree prompted the revision of the Regionalization Master Plan in 2012 [32]. Following extensive discussion, the CIB meeting of August 29, 2012, agreed on a configuration of 8 health regions (Augustinópolis, Araguaína, Guaraí, Palmas, Porto Nacional, Paraíso, Gurupi, and Dianópolis), in accordance with the criteria adopted therein and with Tripartite Commission (CIT) Resolution No. 004/2012 [33]. Chart 06 presents the current health regions of the State of Tocantins, their catchment populations, and their share of the total population [28]. The Sole Annex contains the 2012 Health Regionalization Map [28].

Chart 06 — Current Composition of the Health Regions, Tocantins

HEALTH REGION	MUNICIPALITIES	CATCHMENT POPULATION	%
1. Augustinópolis	24	191,094	13.81
2. Araguaína	17	262,650	18.99%
3. Guaraí	23	146,205	10.57
4. Palmas	14	301,576	21.80
5. Porto Nacional	12	102,313	7.40
6. Paraíso	16	115,685	8.36
7. Gurupi	18	171,546	12.40
8. Dianópolis	15	92,376	6.68
TOTAL	**139**	**1,383,445**	**100.00**

Source: SESAU/TO — PDR 2025.

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According to the information obtained from the documentary analysis, the Department of Health of the State of Tocantins, in recognition of its responsibility for public health, is organizing its Health Care Network, a process that entails reorganizing medium- and high-complexity outpatient and hospital services. The current administration has therefore already expanded high-complexity care services in strategic areas through the thematic Urgent Care and Stork (Cegonha) Networks, as shown in Chart 07.

Chart 07 — Hospital Beds Brought into Operation without Federal Funding, 2020.

Health Facility	New services implemented and in operation without federal funding	Increase Required in the MAC Ceiling (R$) — Month	Increase Required in the MAC Ceiling (R$) — Year
Dona Regina Hospital and Maternity Center	08 Neonatal ICU beds	365,000.00	4,380,000.00
Palmas Children's Hospital	10 Semi-Intensive Care Unit beds	243,333.33	2,920,000.00
Araguaína Regional Hospital	20 Adult ICU beds, Type II	730,000.00	8,760,000.00
	08 Surgical Ward beds	63,117.50	757,410.00

Health Facility	New services implemented and in operation without federal funding	Increase Required in the MAC Ceiling (R$) — Month	Increase Required in the MAC Ceiling (R$) — Year
	08 Adult ICU beds, Type II	292,000.00	3,504,000.00
	10 Semi-Intensive Care Unit beds	243,333.33	2,920,000.00
Palmas General Hospital	40 Observation beds	315,587.50	3,787,050.00
	Expansion of various outpatient and emergency services: laboratory tests, consultations, imaging, and diagnostics	813,619.00	9,763,310.00
TOTAL		**3,065,990.66**	**36,791,770.00**

Source: Department of Health of the State of Tocantins — 2020.

An analysis of the financial amounts allocated to medium- and high-complexity care (MAC) in Tocantins from 2020 to 2025, presented in Table 02, shows that over the last seven years an annual average of R$116 million in the state's own resources was applied at these levels of complexity. This amount corresponds to 80% of the annual average applied by the Union, which stood at R$143 million. When human resources are included, the state's annual average rises to R$346 million, which then corresponds to 238% of the total applied by the Union. The documentary analysis of the budgetary and financial execution reports established that 61% of the professionals remunerated by the Department of Health of the State of Tocantins are engaged in the delivery of medium- and high-complexity services.

Table 02 further shows that, taking 2006 as the baseline, there is an upward trend in the totals applied to MAC by both the Union and the State Treasury of Tocantins. In the Union's figures, only the years 2021 and 2025 show a decline relative to 2021, while in the case of the state a decline occurs in 2020 relative to 2019 [29].

On average, MAC care absorbs 68% of the total execution of the state's own resources over the period analyzed.

Table 02 — Amounts Allocated to Medium- and High-Complexity Care (MAC), Tocantins, 2020 to 2025

Indicator	Mean	Median
Federal funds (R$)	143,162,057.83	155,792,959.37
State Treasury own funds (R$)	116,301,624.95	127,526,447.50
Total (R$)	259,463,682.78	303,694,469.70
State own funds as % of federal funds	80%	81%
Personnel — Treasury funds (R$)	229,903,975.53	242,297,265.18
State total including personnel (R$)	346,205,600.48	369,823,712.68
State total (incl. personnel) as % of federal funds	238%	214%
Overall total (R$)	501,559,344.27	485,376,024.99
MAC as % of own resources executed	68%	67%

Note: the source document does not contain a header row for this table; the identification of each line and the transposed layout were reconstructed from the accompanying narrative and must be confirmed by the author.

SOURCE: * www.fns.saude.gov.br — FNS/MS.

** Data obtained from SIAFEM Tocantins, Report of Commitments and Payments (Relpdug) — 2006–2012.

*** A rate of 61% was applied to the total payroll of the Department of Health, corresponding to the share allocated to medium- and high-complexity personnel, with the remaining 39% allocated to the other sectors.

When the same comparative analysis of the application of resources by the Union and by the state is carried out in Table 03, exclusively for the maintenance of the nineteen hospitals administered by the Department of Health of the State of Tocantins, where most of the hospital demand is concentrated, the mean value of the SUS procedure performed is found to be R$178.84, of which an average of 78% is financed by the State Treasury's own resources and 22% by the Union.

Table 03 — Maintenance of the State's Own Hospital Network: Unit Value of the SUS Procedure, 2020 to 2025

Panel A — Budget execution (R$)

YEAR	State Treasury Resources	Personnel — Treasury Resources**	Fund-to-Fund Resources — MAC	Total Applied to Hospital Care (a)
2006	19,870,464.14	128,558,078.79	60,892,118.78	**209,320,661.71**
2007	66,920,624.81	143,511,863.44	53,354,358.01	**263,786,846.26**
2008	77,241,246.19	160,379,591.56	73,709,250.34	**311,330,088.09**
2009	64,116,966.27	197,315,050.51	97,937,218.79	**359,369,235.57**
2010	100,290,063.62	242,297,265.18	88,906,457.53	**431,493,786.33**
2011	69,060,939.34	328,452,517.52	77,353,770.93	**474,867,227.79**
2012	161,173,805.95	408,813,461.69	104,161,736.27	**674,149,003.91**

Panel B — Unit value of the procedure and distribution of funding

YEAR	Output Reported to SIA and SIH (physical volume) (b)	Total Unit Value of the Procedure (R$) (c = a/b)	Unit Value Borne by the Treasury (R$)	Unit Value Borne by MAC (R$)	% Paid by the Treasury	% Paid by the Union
2006	1,555,984	134.53	95.39	39.13	71%	29%
2007	1,692,245	155.88	124.35	31.53	80%	20%
2008	1,936,512	160.77	122.71	38.06	76%	24%
2009	1,940,372	185.21	134.73	50.47	73%	27%
2010	2,401,055	179.71	142.68	37.03	79%	21%
2011	2,834,822	167.51	140.23	27.29	84%	16%
2012	2,513,056	268.26	226.81	41.45	85%	15%

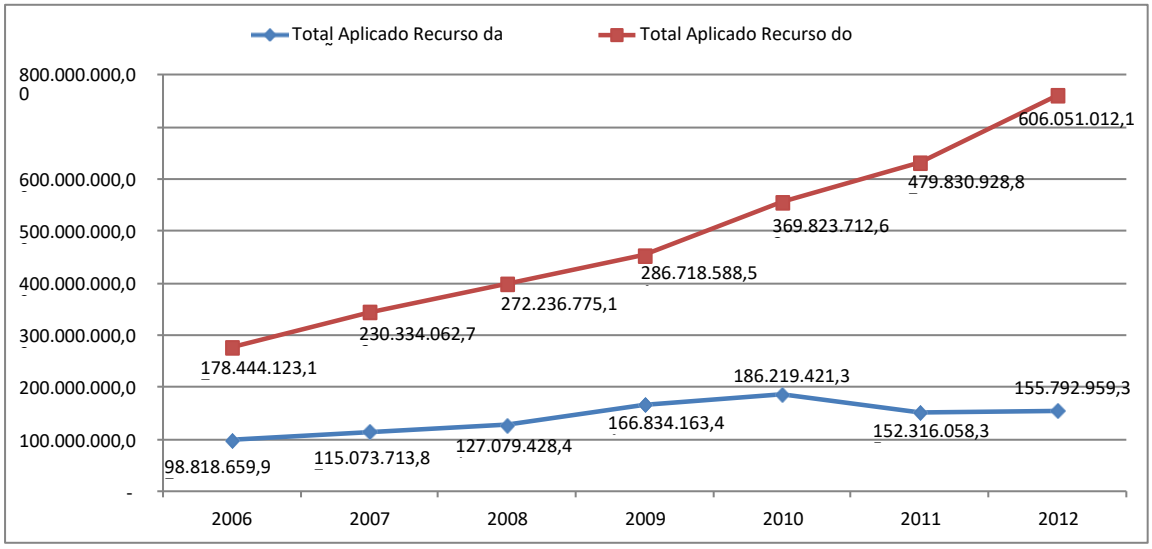
SOURCE: RELORC — SIAFEM 2006–2012.

Output data: AIH Movement — Reduced Files — Brazil — 2008; SIA — Value Reported by Billing Year according to UPS Cod Hosp Ref.

****NOTE:** To estimate the amount allocated to personnel and social charges in the hospital sector, a rate of 61% was applied to the total payroll.

Graph 01 shows that in the State of Tocantins the trend in the application of financial resources to medium- and high-complexity health actions and services from the State Treasury is twice as large as the application from the federal level. This points to underfunding by the Union, particularly when it is considered that the state is part of the Legal Amazon and faces challenges that substantially increase the cost of outpatient and hospital care, such as difficult geographic access — health regions have extreme points more than 200 km apart — low population density, and the high cost of establishing and retaining specialized professionals in the interior.

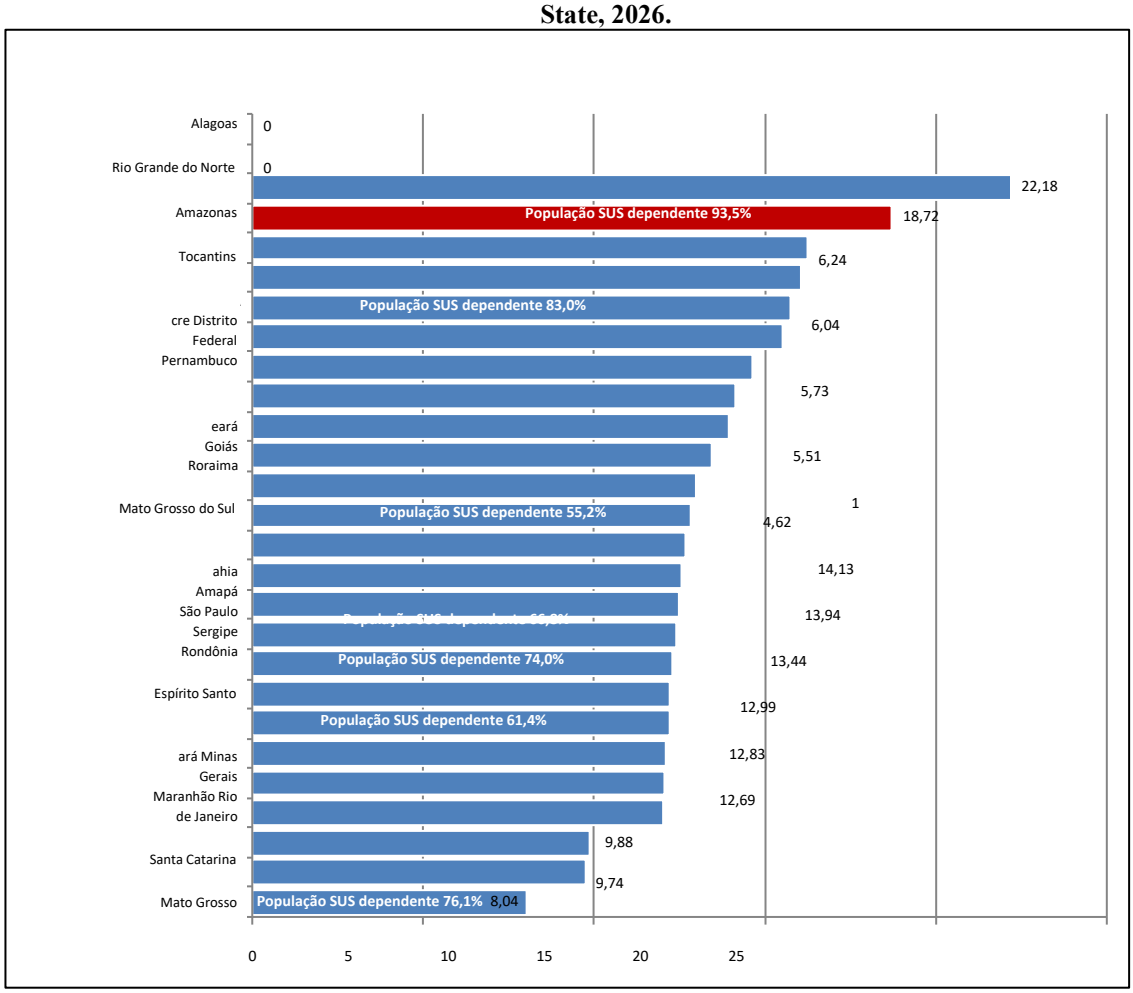
Graph 01 — Trend in the Application of Resources to the Organization of MAC in Tocantins by the Union and the State, 2020 to 2025, including personnel and social charges (in R$).



SOURCE: FNS/MS and SIAFEM Tocantins, Report of Commitments and Payments (Relpdug), 2020–2025.
NOTE: A rate of 61% was applied to the total payroll, corresponding to the share allocated to medium- and high-complexity personnel.

The State of Tocantins ranks second in the application of its own resources to health care, at 18.72% as reported in SIOPS (Public Health Budget Information System)[30], as shown in Graph 02, which compares own-source health spending across the states of the federation.

Graph 02 — Rate of Application of Own Resources to Health Care and SUS-Dependent Population by State, 2026.



Source: SIOPS — Tocantins 2011–2021, data as of 08/27/2022; ANS — Medical Care, March 2022.

Graph 03 presents the trend in total health expenditure relative to expenditure financed by the state's own resources from 2020 to 2025, as reported in SIOPS in strict accordance with the methodology that counts as expenditure only those items defined in Complementary Law No. 141/2011 [31]. An upward trend in total annual health expenditure is apparent, with a markedly larger share borne by the State Treasury's own resources, corresponding to an average of 74% of total annual health expenditure.

Chart 09 presents data on the federal government's financial shortfall in relation to the State of Tocantins for care provided to SUS users from the states of Pará and Maranhão, pursuant to Ministerial Ordinance GM/MS No. 3,213/1998, totaling R$4,087,678.75 per year. The financial resources for the ceiling reallocation from those states have not been updated since 1998 — at that time the amount was R$700,000.00 per year, whereas this cost currently stands at R$4,787,678.71 per year, thus representing an annual shortfall of R$2,293,928.39 in relation to the State of Pará and of R$1,793,750.32 in relation to Maranhão. The catchment population of those states is 1,792,533 inhabitants, for whom 31,144 outpatient and hospital services were provided between June 2020 and May 2025, according to TABWIN SIA-SIH/SUS data.

Chart 09 — Care Provided by Tocantins to Users from the States of Maranhão and Pará — Amounts in R$

State	Cost of Hospital Admissions (SIH/SUS)	Cost of Outpatient Care (SIASUS)	TOTAL
Pará	2,126,655.86	777,272.58	2,903,928.39
Maranhão	903,850.19	979,900.13	1,883,750.32
TOTAL	**3,030,506.05**	**1,757,172.66**	**4,787,678.71**
Total transferred annually by the Union			**700,000.00**
Shortfall/month (R$)			**340,639.89**
Shortfall/year (R$)			**4,087,678.71**

Source: TABWIN — SIH/SIA/SUS, December 2024 to November 2025.

Conclusion

The research made it possible to assess the application of financial resources from the Treasury of the State of Tocantins to health actions and services at the medium- and high-complexity level of care. It was found that these resources support the organization and operation (32) of 68.68% of the state's hospital beds and 85% of admissions, cover 61% of the remuneration of health professionals, and absorb 68% of the total own-source budget executed over the period.

In comparing the application of federal funds with that of the state's own health resources in the State of Tocantins — at the State Department of Health, the body responsible for health management at the state level — it was found that, over the period from 2020 to 2025, the state applied to the delivery of health actions at the medium- and high-complexity level an average of 238% of the total applied by the Union. This confirms that the state has been supplementing federal funding and, in so doing, has affirmed its commitment to health care through the co-financing of actions at these levels of complexity, securing for them an annual average of 68% of the State Treasury's own resources.

The analysis of total per capita spending, comparing total expenditure with expenditure financed by the state's own resources, showed that the participation of the State of Tocantins in health financing grew considerably in each year of the period analyzed, given that 74% of total annual health expenditure was met with State Treasury resources. This corroborates the finding of Lima and Baptista [33] regarding the declining share of federal spending on health actions and services. Such a substantial state contribution may lead to a devolution of responsibility on the part of municipal management, since the direct provision of actions and services by the state compromises the municipalities' specific competencies in health financing and management when the state assumes responsibility for medium-complexity health services.

The study points to a dependence of municipalities on the state in medium- and high-complexity outpatient and hospital care, indicating that decentralization of the SUS within the state has been slow and challenging, given that the state administers 68.68% of SUS beds.

Finally, it is recommended that the study be forwarded to the Ministry of Health (the federal manager of the SUS) with a view to requesting additional funding capable of improving the financing of health care in the

state, thereby mitigating the bottleneck in the funding required to maintain the medium- and high-complexity outpatient and hospital services described herein.

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