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Financial crisis and healthcare: the case of the municipality of Rio de Janeiro, Brazil

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Abstract *This study aimed to portray the effects of the Brazilian financial crisis, and especially in Rio de Janeiro in the 2013-18 period. We analyzed revenues, expenditure, service provision, and health performance indicators from free access and restricted data. We adopted the Giddens' Structuration Theory. Revenues and expenditures shrunk, and this reduction was higher for investments and unlinked revenues. The provision of services declined, resulting in decreased primary care coverage, outpatient production, total hospital admissions, number of beds, doctors, community health workers, surgeries performed, and hospital occupancy rate. An increase was observed in waiting times for ambulances, exams and outpatient visits, as well as the number of pending requests in regulation. Health and performance indicators remained mostly unchanged, within previous parameters, corroborating the care capacity of PHC, despite financial and structural contingencies imposed by austerity. The current situation threatens the right to health, and governmental response, such as unlinking revenues, point to an increased risk of this occurrence.*
Key words *Public Policy, Primary Health Care, Healthcare, Healthcare Financing, Service Indicators.*

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Introduction

Although health is part of social security in Brazil, assuming the condition of a universal right provided for in the 1988 Constitution, the country is at odds with others with universal systems, especially concerning government health expenditure and provision of services[1].

Health policy analysts agree that the biggest challenges of the Unified Health System (SUS) are of a political nature. The guarantee of public subsystem financing, the redefinition of the public-private articulation, which has favored the market through tax incentives and subsidies, and the reduction of income, power and health inequalities, are issues to be overcome[2-5]. While SUS expenses increased by 0.5% in real values from 2012 to 2016, gross revenue from health plans and insurance in the same period grew by 27.0%[1].

However, health equipment and services expanded and diversified considerably over the 30 years of its establishment, and the number of doctors, nurses, and dentists working in the system[5] increased.

Concerning Brazilian PHC, advances include expanding supply, facilitating access, greater availability of regular demand services with positive impacts on the health of the population[6]. Although it is not possible to isolate the effects of primary care, it is entirely plausible that the result of the 45% reduction in the standardized rates of hospitalization due to PHC-Sensitive Conditions (ICSAPS) from 2001 to 2016 is linked to the advance of the Family Health Strategy (ESF) coverage in Brazil in synergy with social policies implemented by the federal management, which provided significant poverty reduction with proven health effects[3,7]. The national coverage of the ESF hiked from 4% in 1998 to 74% in 2018, incorporating more than 147 million people into the health system.

Although there is room for expansion and improvement of health actions and services, the SUS faces new challenges in the current context of a financial crisis that imposes budgetary constraints on social spending. The difficulties increased in 2016, after the enactment of Constitutional Amendment (EC) 95/2016[8], which imposes an austere agenda on the Social Security system, with a substantial impact on health. The new tax regime approved by most House and Senate parliamentarians freezes federal primary spending for the next 20 years, severely affecting established social rights. EC 95 is estimated to decrease the proportion of federal health spending from 1.8% to 1.45% or 1.2% or 0.99%, depending on the GDP growth rate[1]. Brazilian fiscal austerity and the consequent prospect of reduced investment in social programs (*Bolsa Família* Program and the ESF) may affect child mortality, as poverty is one of the most critical social determinants of child health. Austerity will also contribute to the death of children due to preventable diseases and increased child hospitalization[7].

Given this scenario of scaled-up economic and social constraints, it is timely to analyze their effects on the various regions. The state of Rio de Janeiro has been the epicenter of several crises in the country; it is an oil power state, a recent host of mega-events, such as the 2016 Olympic Games, source of several political scandals, and at the same time generating innovations, especially in health[9].

Specifically, concerning Rio de Janeiro, we can observe that the crisis scenario has generated adverse effects on the management, organization, and access to health services. The consequences are worse off in Primary Health Care (PHC), whose structuring was late compared to other major capitals. The PHC gained centrality in the government agenda in 2009 with the project entitled *Saúde Presente*, through the partnership with Social Organizations in the management and provision of services. Besides expanding family health coverage to 70% by the end of 2016, the project invested in the training of SUS workforce, with the creation of Family and Community Medicine and Nursing in Family Health residency programs, in the improvement of management skills and tools, such as the decentralization of budget resources, and in the design of the financial incentive system with performance indicators of ESF teams[9].

This study explored the effects of the financial crisis on revenues and expenditures, production, and performance of health services in Rio de Janeiro from 2013 to 2018. The results are expected to support the formulation of new ways to ensure better health endpoints for the population.

Methods

This is an exploratory, descriptive study with emphasis on PHC. The trend of revenues, expenses, service provision parameters, and performance and health indicators were examined from documentary analysis and simple statistical analysis of

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secondary data of open and restricted access. The analysis of health-related revenues and expenses in Rio de Janeiro covered the 2013-2018 period, due to the availability of data and the relevance of analyzing the trend of parameters in this period. The period of analysis of data related to the provision of health services and indicators was from 2016 to 2018. A time selection was started in 2016 due to the greater availability of all analyzed parameters and because it was the year of publication of EC 95/2016, and 2018 is the last year with full data available for comparison purposes.

Data collection was structured in five realms for the health system: financing, access, human resources, regulation and management, and care indicators. The parameters were chosen considering three aspects: the ability to measure the performance of the health system and its costs, availability in the official information systems or at the Municipal Health Secretariat of Rio de Janeiro, and comparison with similar data.

Financing data for analysis of revenues (health revenues from the municipality; Federal Government transfers of SUS funds by financing block; revenues from taxes and constitutional and legal health-related transfers) and expenditure (expenditure from municipal sources with Health Actions and Public Services (ASPS)), by type (investment and costing) were extracted from the Public Health Budget Information System (SIOPS), accessed from http://siops.datasus.gov.br (consultation per year, last two months of the year). Data were deflated using the Extended National Consumer Price Index (IPCA), converted to December 2018 values. The expenditure stage considered in the consultation was settlement since the service was provided in that fiscal year in this stage of budget implementation. This concept has been recommended in health account manuals[10]. The municipality's Official Gazette was consulted to verify appointments in management positions during the study period.

The effects of the crisis were classified into four realms: access; human resources; regulation and management; and financing. The variables of access, human resources, and regulation and management realms were: e-Manager, Outpatient Information System (SIA) and Hospital Information System (SIH), National Health Facilities Registry System (SCNES), National Regulation System (SISREG), Official Gazette of Rio de Janeiro and Management Contracts. Health and performance indicators were extracted from the Live Births Information System (SINASC), National System of the National Immunization Program (SI-PNI), Mortality Information System (SIM), and Notifiable Diseases Information System (SINAN).

Although the performance analysis included indicators related to the health care network as a whole, including PHC, regulation, and hospital care, the emphasis was given to the analysis of PHC indicators, since significant financial reductions and, consequently, the most substantial contraction of services provided were applied at this level of care.

The two Municipal Health Plans (MHP) that encompassed the studied period were analyzed. For comparison purposes, the following criteria shown in the MHPs were observed: primary care; urgent care; mental health; pharmaceutical care; goal of indicators; and guidelines.

The analysis was based on Giddens' Structural Theory[11], in which the structural properties of the social system are a means and result of social practices. The structure consists of rules and resources. The rules are normative regarding rights and obligations, and semantic regarding the qualitative and procedural meaning of practices. Resources are allocative for material goods and authoritative regarding power. The institutional analysis, which examines structural properties through the analysis of the way rules (legislation, protocols) and resources (human, financial, physical structure) influence social actions[11], was used in this study. A synthesis of data retrieved from the different sources was elaborated from the Giddens Structuring Theory, considering the structural realms.

The Research Ethics Committee of the Municipal Health Secretariat approved this research.

Results and discussion

At this stage, financing data are presented, followed by a balance of the effects of the financial crisis on the realms of management and provision of health services in Rio de Janeiro. Next, the care indicators are shown in the studied section. Finally, we show a commented comparison of the Municipal Health Plans in force in the period and an analysis of the institutional context in the light of the Structural Theory framework.

Table 1 shows that the health revenues of the municipality decreased continuously from 2013 to 2017, reaching an accumulated decline of 16.3%, showing a 4.4% recovery only in 2018, compared to 2017.

Also, Federal Government SUS resource transfers fluctuated with falls in 2014, 2015 and 2017 of 4%, 16%, and 8%, respectively. The Federal Government transfers related to PHC and High and Medium Complexity fell in 2014, 2015 and 2017, at a rate of 2%, 9% and 5% for PHC and 8%, 16% and 9% for High and Medium Complexity, respectively. We can see a sharp shrinkage of funds when looking at the item "other transfers of SUS funds", from almost 107 million reais in 2013 to just under 19 million in 2017, representing an 82% decline in four years. In 2018, these transfers began to increase, signaling a partial recovery, but without returning to 2013-14 levels.

Revenues from taxes and health-related constitutional and legal transfers have continued to fall in all three spheres until 2017, except for 2016 at the federal level. In 2018, these revenues resumed their upward trend, without recovering from 2013-14 levels.

Own resources invested in Health Actions and Public Services (ASPS) exceeded the mandatory 15% for the municipal level in the entire period, reaching 25.7% in 2017. However, after a fluctuation with increases of 7% in the 2013-14 period, and 22% in the 2015-16 period, significant reductions of about 800 million in the accumulated total were observed in the last two years. Although there was no loss of revenue, the municipality reduced the percentage of its health resources in 2018, down from 25.7% to 21.1%. Investment expenses, which increased significantly by 50%, 237% and 71% in 2014, 2015 and 2016, respectively, fell sharply in 2017 from just over 154 million reais for 2016 to 2.4 million in 2017, a reduction of 98%. In 2018, this expense matched the 2014 level with R$ 29.6 million invested. Costing expenditure that suffers reductions between 2013 and 2017, except for 2016, fall another 424 million in 2018.

The data shown in Box 1 seek to provide a broad overview of the impact of the fiscal crisis on the health sector in the city of Rio de Janeiro.

In the Access realm, we observed that although the population coverage by PHC between 2016 and 2017 still showed an increase of 3.3%, in the 2017-2018 period, it ends up falling 8.4%. Considering that an ESF coverage of more than 70%, if sustained for four years, can reduce child mortality, which in the case of Rio de Janeiro has already reached a reduction of 22%[12], the fall of ESF coverage to a level less than 70% was a setback.

Oral Health coverage suffered the most significant impact, with systematic reductions of 4.5% and 11.5% in the period observed. Total outpatient production, which affects all points of care, fell by 6.8% in the 2016-17 period, with a partial recovery of 3.7% in the 2017-18 period. Total hospitalizations, a parameter that reflects the production volume of hospital care, hiked 6% in 2016-17; however, it decreased by 5.2% in 2017-18.

The Human Resources realm evidenced a systematic decline in the number of doctors, both those working in PHC and involved with high and medium complexity care. The contingent of Community Health Workers (ACS) also shrunk. In the 2016-2017 period, reductions were less intense, with a decrease of 1.2%, 1.8% and 2.4% in the number of PHC doctors, non-PHC doctors, and ACS, respectively. However, the reductions were 11.1%, 9.4%, and 10.4%, respectively, between 2017 and 2018.

The provision and settlement of doctors in socially deprived areas affect especially PHC, where only 23.5% of Brazilian doctors work[13]. In 2012, Rio de Janeiro started to invest heavily in the qualification and fixation of family doctors through the various family and community health residency programs. The threats of team downsizing that began in 2018, generating strikes in Rio de Janeiro's PHC, generated insecurity for the successful project of training of medical specialists for the ESF, reducing the demand and filling of vacancies of the SMS Rio Family Medicine Residency Program.

Even in a country whose health care system is not universal and PHC is not a care regulator, such as in the U.S., recent studies have shown an association between increased numbers of primary care physicians and reduced mortality from cardiovascular disease, cancer, and respiratory disease, and increased life expectancy[14].

The falling number of ACS shows an alignment with the 2017 PNAB, which provides fewer professionals per team, allowing the local manager to cut jobs to reduce costs. A systematic review on the performance of community workers in low- and middle-income countries showed the increased quality of interventions, such as behavioral changes in patients, better use of services, adherence to protocols and treatments, and technical competence of the agents[15]. A systematic review of Brazilian studies has shown that ACS carry out beneficial interventions in various fields, especially in maternal and childcare. Several factors explain the potential benefit of ACS: as they are residents, they establish strong commitment and trust with the population they serve; they know local resources,

Table 1. Income and Expenses related to Public Health Actions and Services in Rio de Janeiro Municipality, 2013-20181 (in thousands of reais).

Year	2013	2014	2015	2016	2017	2018
Revenues[2]	18,562,442	17,901,773	16,876,377	16,275,144	15,544,370	16,221,947
SUS funds transfers from the Federal Government	1,826,875	1,746,881	1,465,522	1,541,717	1,417,807	1,539,006
Primary Care	410,701	404,410	367,087	413,372	392,548	411,132
Medium- and High-Complexity	1,295,753	1,198,424	1,003,005	1,003,802	916,912	963,339
Health Surveillance	70,575	75,754	56,517	70,543	67,024	69,632
Pharmaceutical Care	40,108	41,043	34,055	40,512	35,102	33,242
SUS management	1,927	324	0	189	104	100
Investments in the Health Services Network	7,001	23,252	4,282	13,299	6,118	0
Other Federal Government transfers	809	3,675	576	0	0	61,561
Other SUS funds transfers[3]	106,986	106,342	42,035	32,193	18,890	50,686
Health-related constitutional and legal taxes and transfers[4]	16,628,582	16,048,550	15,368,820	14,701,235	14,107,672	14,632,255
Municipal	12,420,874	11,970,429	11,510,686	11,061,656	10,578,248	10,921,325
State	3,866,991	3,740,556	3,577,326	3,340,007	3,246,768	3,421,155
Federal Government	340,717	337,565	280,807	299,572	282,656	289,776
Total Expenditures on Public Health Services and Actions (ASPS)	5,205,984	5,091,907	4,897,081	5,396,085	5,000,751	3,381,462
Investment expenses	17,841	26,729	90,176	154,147	2,483	29,653
Costing expenses	5,188,142	5,065,178	4,806,905	5,241,938	4,998,267	3,351,809
Own Resource Expenditures	3,230,169	3,339,564	3,216,437	3,746,410	3,627,571	3,086,726
Percentage of own resources applied to ASPS	19.4%	20.8%	20.9%	25.5%	25.7%	21.1%

Notes: 1. The stage of expenditure considered in the consultation was settlement, since at this stage of budget implementation, the service was provided in the said fiscal year. This concept has been recommended in health account manuals (Vieira and Piola10). 2. Other Federal Government transfers include the following detailed SIOPS items: Other Fund-to-Fund transfers, Covenants, Other Federal Government transfers. 3. Other SUS funds transfers include the following SIOPS detailed items: Revenues from the service provided to the State, other Municipalities and Private Institutions, Remuneration of bank deposits and Revenue from other health services. 4. Includes the health-related constitutional and legal taxes and transfers: Municipal - Rural Territorial Property Tax (ITR), Urban Land and Property Tax (IPTU), Income Tax (IRRF), Real Estate Property Transfer Tax (ITBI), Tax on Services of Any Kind (ISS), besides fines, default interest and active debt; Federal Government – Share of the Municipalities Participation Fund (FPM) and the ITR, and the Kandir Law funds; State – Share of the Tax on Transactions on Circulation of Goods and Services (ICMS), Motor Vehicle Property Tax (IPVA) and Tax on Industrialized Products (IPI Exportação).
Source: Own elaboration. SIOPS - Public Health Budget Information System - 2018 Values - IPCA (IBGE). The original values were divided by one thousand.

favoring social mobilization; and are adept at producing cultural skills, a crucial attribute for PHC[16].

In a financial crisis scenario, the contract-based management model with a social organization is more susceptible to adjustments and contingency due to the flexibility of the contracts, than linked municipal expenses, such as the statutory civil servant's payroll, and may aggravate budgetary issues as a whole, especially the provision of health professionals.

In the Regulation and Management realm, the emergency response time of ambulances in PHC increased significantly over the entire period studied, increasing by 48.4% between 2016 and 2017, and subsequently by 60.2% between 2017 and 2018. This increase is of concern because of the potential damage to the patient's clinical condition and survival.

Municipal beds registered in SCNES decreased by 3.6% between 2016 and 2017, and by 5.8% between 2017 and 2018. The supply of beds to the regulatory system fell by 18.4% in the 2016-17 period, and 15.8% in the 2017-18 period. This scenario of lower bed availability for the regulatory system exacerbates the difficulty of access to the hospital bed in the municipal Urgent Care Network[17].

Vacancies for exams and visits with specialists decreased by 9.9% in the 2016-17 period and by 5.6% in the 2017-18 period. The monthly average of pending requests in the regulatory system increased by 58% between 2017 and 2018.

Chart 1. Effects of the health crisis in the city of Rio de Janeiro, from 2016 to 2018.

Realms	Parameters	Reference points of care	Measurement unit	2016	2017	2018
Access	Population Coverage of Family Health Teams	PHC	Percentage	68.6%	70.9%	64.9%
	Population Coverage of Oral Health Teams	PHC	Percentage	32.0%	30.6%	27.1%
	Total outpatient production	All	Quantity approved	60,064,297	55,964,458	58,061,988
	Total hospitalizations	HC	Quantity approved	150,814	159,829	151,473
Human Resources	Family Health Teams without doctors	PHC	Percentage	5.9%	3.6%	8.0%
	Total Doctors Total1	All	Nº professionals	9,906	9,742	8,778
	PHC Doctors1	PHC	Nº professionals	2,774	2,740	2,435
	Community Health Workers1	PHC	Nº professionals	6,803	6,642	5,935
Regulation and Management	Ambulance response time to primary care emergencies1	All	Hours	1:18:13	1:56:06	3:06:00
	SCNES-registered municipal beds1	HC	Unit	4,742	4,617	4,351
	Supply of beds to the regulation system	HC	Unit	20,003	16,329	13,754
	Vacancies for exams and specialist visits	SC	Unit	1,425,101	1,283,642	1,211,752
	Timely scheduling of visits and examinations in the regulation system (≤90 days)	SC	Unit	1,425,101	1,150,499	1,045,436
	Mean waiting time for elective visits in Specialized Care	SC	Days	47	85	88
	Mean pending requests for visits and exams with more than 90 days of incorporation into the regulatory system	SC	Unit	115,967	93,690	148,649
	Occupancy rate of municipal hospitals2	HC	Percentage	70.7%	71.6%	68.4%
	Performed surgeries3	SC and HC	Quantity approved	622,501	558,539	519,500
	PHC Municipal List of Essential Medicines Zeroed	PHC	Percentage	27.5%	43.2%	25.5%
Financing	Expenditure settled with Public Health Services and Actions per year[4]	All	Reais	R$ 5,396,084.96	R$ 5,000,750.79	R$ 3,381,462.22
	Own revenue for Public Health Actions and Services	All	Percentage	25.5%	25.8%	21.1%
	Incentive system / 14th salary	All		Financial incentive system linked to meeting performance targets on selected indicators	Exclusion of the Incentive System	Exclusion of the Incentive System

Notes: 1 - Data referring to the last month of the year (December). 2 - The occupancy rate took into consideration the daily rates showed by the municipal hospital units per year and the beds registered at CNES. 3 - Concerning the number of surgeries performed, deliveries were excluded, since their execution is linked to the incidence of live births in the reference year, and not to network performance. 4 - Values of 2018 – IPCA (IBGE). Captions: PHC – Primary Health Care; HC – Hospital Care; SC – Specialized Care; All – All points of care.
Source: Own elaboration. Platform of the Undersecretariat for Primary Care, Surveillance, and Health Promotion (SUBPAV); SIOPS, SCNES; SIA; SIH.

The occupancy rate of municipal hospital units fell by 4.6% between 2017 and 2018. The surgeries performed decreased by 10.3% in the 2016-17 period, and by 7.0% in the 2017-18 period, totaling 16.5% for the period.

The occupancy rate of municipal hospitals remains outside the ideal range recommended by the international literature, between 75 and 85%[18], with a downward trend between 2017 and 2018. The lower surgical production in municipal units will have repercussions on the current long elective surgery waiting lists. Fewer supply of exams and visits with specialists combined with the increased monthly mean of pending requests for exams and visits in the regulatory system reflect a restricted supply, with ensuing reduced access.

Regarding drug dispensation in PHC, the mean percentage of essential drugs dispensed whose stock was cleared arrived at 27.5%, 43.2% and 25.5% in 2016, 2017 and 2018, respectively. In 2016, the number of drugs with zero monthly stock ranged from 13 to 94, out of 175. In 2017, it ranged from 9 to 125, and from 26 to 63 in 2018.

Concerning health and performance indicators in PHC (Box 2), favorable results were maintained, as in ICSAPS, in the proportion of HIV-positive users with undetectable viral load and the cure rate of new pulmonary tuberculosis cases with laboratory confirmation. The proportion of ICSAPS is one of the results that undeniably illustrates the benefit of PHC investment in the municipality in recent years, which has evidenced a lower hospitalization rate, particularly for cardiovascular disease and asthma, including vaccine-preventable diseases, cardiovascular disease, diabetes, nutritional deficiencies, and chronic lung diseases[19]. The result remains stable since the decline presented after the first years of the implementation of the ESF in Rio de Janeiro[19], remaining below the Brazilian average. Concerning new cases of congenital syphilis in children under one year, a reduction of 488 cases was recorded in the 2016-18 period.

In the field of infectious diseases, the cure rate of pulmonary tuberculosis, a challenge faced by Rio de Janeiro for decades, increased in 2018. The increase in the PHC service portfolio, which has incorporated the management of most cases of people living with HIV in recent years, shows good results in the control of the disease, with a tendency to increase the proportion of users with undetectable viral load.

PHC services were responsible for the insertion of 10,242 intrauterine devices (IUDs) in the three-year period evaluated. Providing long-term contraceptive methods, such as the IUD, is a strategic action for reproductive planning, as it has the best birth control results, with high adherence and low complication and failure rates. When targeted at the group of women at the highest reproductive risk, it has the potential to reduce morbidity and mortality directly associated with pregnancy. Also related to the puerperal pregnancy cycle and its care in PHC, improved indicators related to the incidence of congenital syphilis and pregnancy in adolescents were recorded.

Other indicators show a still unsatisfactory performance in the period considered, as in the case of the proportion of pregnant women with six or more prenatal visits and pentavalent vaccination coverage, with a steeper fall from 2017. The reason for collecting cervical cytopathological exams also persists to a very low and falling proportion.

For the indicator of vaccination coverage, which shows a significant decrease in 2018, a measurement bias resulting from the change of information system recommended by the Ministry of Health is observed. In that year, the municipality of Rio de Janeiro adhered to the National Immunization Program Information System (SI-PNI), and registration in this new system is responsible for the significant drop in the value of immunization coverage recorded.

Parameters such as the coverage of cervical cytopathological exams and the proportion of people with diabetes with adequate metabolic control, strategic actions of PHC services, both underperforming, indicate the need for step-up and qualification of care actions at these points of care. These results do not allow us to evaluate the cost-effectiveness of the investment in PHC unfavorably, but only realize that it must be maintained, monitoring its quality and effectiveness, in order to achieve the expected performance. These are hard-to-reach goals that require sustained long-term public policies, with unsatisfactory results even in rich countries with well-structured health systems and strong PHC[20].

Outcome indicators, such as child and maternal mortality, have often been used as an argument to minimize the impact of ESF expansion and to justify PHC reform in Rio de Janeiro, as they have not fallen significantly. These indicators, however, are multifactorial, and are significantly influenced by social determinants and the performance of other points in the network, and take more time to reflect changes implemented in health systems[21].

Chart 2. Selected PHC care indicators in the municipality of Rio de Janeiro, 2016-2018.

Indicators	Parameters	2016	2017	2018
Pregnant women with ≥ 6 prenatal visits[1]	76.5%	81.5	66.5	66,5
Pentavalent Vaccine Coverage (3rd Dose) in One-Year-Olds[2]	98.0%	92.0%	78.6%	78,6%
Number of new cases of Congenital Syphilis in children under one year of age	1,582	1,437	1,094	1.094
Rate of cure of new cases of laboratory-confirmed pulmonary tuberculosis	70.8%	66.1%	78.3%	78,3%
Ratio of cervical cytopathological exams[3]	0.43	0.36	0.35	0,35
Number of intrauterine devices inserted	2,722	3,937	3,583	3.583
Glycemic control rate in registered diabetics[4]	-	26.6%	26.2%	26,2%
Proportion of users with undetectable viral load / total number of users who underwent viral load in the period	77.0%	76.0%	80.4%	80,4%
Proportion of teenage pregnancy between 10 and 19 years	14.9%	14.1%	13.2%	13,2%
Admissions for PHC-sensitive conditions	24.4%	22.9%	23.4%	23,4%
Child mortality	12.8	11.2	11.5	11,5
Maternal mortality	74.6	82.9	61.2	61,2

Caption: 1 - Until 2016, this parameter was computed as the proportion of live births of mothers with seven or more prenatal visits. 2 - Coverage referring to 2018 computed only until September. 3 - Calculation: (Number of cervical cytopathological exams in women aged 25 to 64 years / Number of women aged 25 to 64 years, residing in the respective place and year) / 3. 4 - This parameter was computed only as of 2018.
Source: Own Elaboration. Secretariat for Primary Care, Surveillance, and Health Promotion (SUBPAV); SISCEL; SINASC; SINAN; SISCOLO; SIM; SIA; SI-PNI.

Box 3 shows a commented comparison of the 2014-2017 and 2018-2021 Municipal Health Plans (MHP) periods. We opted for the analysis MHPs considering that they represent the intentionality of the government agreed with the Municipal Health Council, giving visibility to the point of dialogue of the manager with social control. Two MHPs encompassed the 2016-2018 period and had two different party administrations.

The main differences identified were found in the proposed PHC and urgent care. As analyzed in the Box 3, the background included a promise of expanded ESF and NASF. Concerning urgencies, the focus shifts from UPA to hospitals. Changes were observed in the organization chart planning, with the creation of new under-secretariats in both governments. In the foreground, guidelines were more operational and did not address funding and scientific and technological development. In the background, noteworthy are the PHC guidelines and discrete proposal for expansion. The other guidelines are more conceptual than operational. The proposed PHC of the 2018-2021 Municipal Health Plan was not preferred, considering that 2018 is the onset of the validity of the Plan.

The analysis of health and performance indicators is consistent with the speech of Mayor Crivella in the opening speech of the 3rd Session of the 10th Legislature, Rio de Janeiro, February 15, 2019.

By 2019, SMS has programmed adjustments to its planning to balance the proposed budget. This will meet the challenge of maintaining a large and complex Hospital Network, redesigning Primary Care coverage, further qualifying care, and streamlining costs.

What has been called "redesigning Primary Care coverage" has resulted in the suppression of family health, oral health, and NASF teams. The option of municipal management to decrease health revenues followed the federal trend, but it was an option of management that even contradicted the Municipal Health Plan, which indicated a slight increase in ESF and NASF coverage.

Box 4 shows the Institutional Analysis of Giddens Structuring Theory, based on the rules and resources that underpin the structure, the scenario found, and the resulting actions.

According to Giddens[11], there is no dualism between social object and human action. Social change may or may not occur, depending on how actors use the rules and resources available for their actions. In the case of the administration of Rio de Janeiro, any emancipatory action was constrained by the structural restrictions. Primary good performance in recent years has not been a sufficient condition for a political option

Chart 3. Highlights of the 2014/2017 and 2018/2021 Municipal Health Plans and comparative analysis.

Criterion	2014-2017 MHP	2018-2021 MHP	Analysis
Primary care	Addressed PHC expansion and quality until 2013	ESF expanded coverage = 2017 70.6%	The ESF expansion took place in the foreground; however, a slight increase is expected from 2017
	Achieves 70.4% coverage in 2016	NASF Expansion	
		Expansion of Integrative and Complementary Practices (PIC) to 2018	
Urgency care	In 2012, the 14 municipal UPAs provided 4.2 million calls. Some 5.3 million UPA calls are estimated for 2017	In the 2018-2021 period, there are plans to increase the number of hospital beds, establish two CERs and implement the Citizen's Electronic Medical Record	In the foreground, the focus is on UPAs, and then on hospitals
Mental Health	The goal is to replace long-term psychiatric beds with concomitant CAPS expansion and therapeutic residence	Yearly implementation of CAPS III and CAPSad III. Expansion of Therapeutic Residential Services (SRT) to 128 SRT by the end of 2020	CAPS and SRT with expected expansion
Pharmaceutical Care	REMUME-RIO 2013 contains 386 medicines, totaling 676 items	REMUME-RIO 2017 contains 503 medicines totaling about 700 items	REMUME expansion only appears in the background, especially for medicines
Planning	Establishment of the Secretariat of Strategic Management and Integration of the Health Network (SUBGER)	Creation of the Sub-Secretariat for Regulation, Control and Evaluation (SUBREG) in 2018	There are changes in the organization chart in both plans
Indicator Goals	Shows the indicators and calculation method and their goals. Examples: Primary Care Team Coverage = 50% ICSAB rate = 30% Proportion of regulated urgency / emergency admissions = 80% Normal birth rate = 43% Proportion of live births to mothers with seven or more prenatal visits = 69% Child mortality rate = 11.0 Cure ratio of new cases of bacilliferous pulmonary tuberculosis = 78.0	Shows the indicators and calculation method, but without setting goals. There are physical goals in absolute numbers. Examples: Schedule visits and exams for up to 90 days from request date: 73% by 2018 and 80% by 2021 Perform medium complexity outpatient dental procedures at the CEOs: 96,310 in 2018, and 105,065 in 2021	Besides indicating a progressive target, the indicators for the 2014-2017 period considered the performance achieved in the period before 2014

it continues

Chart 3. Highlights of the 2014/2017 and 2018/2021 Municipal Health Plans and comparative analysis.

Criterion	2014-2017 MHP	2018-2021 MHP	Analysis
Guidelines	Guideline 1: To achieve universal access to health services with reception and resolution at all levels of care	Guideline 1: To strengthen public health care and its financing with expansion, streamlining and greater oversight of SUS resources	The 2014/2017 MHP Guidelines address universalization, SUS principles, prevention and promotion actions, social control, mental health, urgency network, regulatory complex, work management and surveillance The 2018/2021 MHP Guidelines address surveillance, training, social control, scientific development, network access and model qualification There is a highlight for PHC, which does not occur in the previous MHP. It explains the increased coverage of the ESF and NASF, as well as refers to mental health, and issues such as appreciation of normal birth, obesity, smoking and violence
	Guideline 2: To ensure continuity, quality and humanization of care to reduce inequalities through health promotion, prevention, care and surveillance	Guideline 2: To consolidate the SUS with the development and implementation of policies that include health education integrated with public health policies, with the qualification of Primary Care, including continuing education, health education, teaching-service integration combined with a communication and training, labor and worker valorization policy, committed to ensuring social rights, strengthening social participation and involving the largest number of civil society stakeholders	
	Guideline 3: To expand discussion spaces and information for management, ensuring participation and social control in the elaboration and implementation of public policies, observed the deliberations of the Municipal Health Council	Guideline 3: To qualify the health care model and ensure access to the adequately regulated and transparent healthcare network as per: a. the epidemiological profile; b. the expansion of primary health care and territory-based mental health devices; c. the regulation of policies and strategies for health prevention and promotion, and life protection geared to healthy eating, tobacco use, obesity control, valorization of normal childbirth, at-risk or vulnerable populations (people living in the streets population, alcohol, crack and other drug users, institutionalized population and home care) and approach to situations of violence in the territory	
	Guideline 4: To implement the drug-dependent care policy, following the Brazilian Psychiatric Reform Guidelines	Guideline 4: To advocate for the universal and equitable public Unified Health System, as provided for in Law 8.080, thus consolidating the expanded, innovative health care model, with the system's primary care structuring, network regulator and care coordinator, guided by the pillars of network regionalization and hierarchy. To increase ESF coverage in 3.1, 3.3 from 2020 To increase the NASF – 2021 To increase oral health – 2019	
	Guideline 5: To improve the urgent care network, articulated with other care networks	Guideline 5: To ensure the right to social participation with new methods of discussion, implementation and evaluation of actions, programs and strategies that regulate services in order to standardize the health portfolio	
	Guideline 6: To restructure the Municipal Regulatory Complex and qualify the Outpatient and Hospital Regulation System		
	Guideline 7: To strengthen work management and health worker development		
	Guideline 8: To reduce risks and health problems to the population through health surveillance		

Captions: MHP: Municipal Health Plan; PHC: Primary Health Care; ESF: Family Health Strategy; NASF: Family Health Support Center; UPA: Emergency Care Unit; CAPS and CAPS ad: Psychosocial Care Center (alcohol and drugs); SRT: Therapeutic Residence Service; REMUME: Municipal Essential Medicines List; CER: Regional Emergency Coordination Office; CEO: Dental Specialty Center.
Source: Own elaboration. Rio de Janeiro Municipal Health Plans.

Chart 4. Institutional analysis from Giddens Structuring Theory.

Structural dimension	Characteristic found	Resulting action
Structural property	Neoliberalism and economic crisis since 2008	Unfavorable international context
	Global Austerity Agenda	
	Structural reforms in European Union health systems (Germany, Spain and England)	
Normative and semantic rules	2017 PNAB	Unfavorable national and local context
	Election in 2018 with replacement of management in Federal Executive Branch with political perspective aligned with the neoliberal paradigm	
	Election in 2016 with change of management in the Municipal Executive Branch in 2017	
Authoritative Resources	Multiple changes of Secretary of Health from 2017: (1) Carlos Eduardo de Mattos / Cardiologist / Municipal Public Servant / City Councilor affiliated to the Social Democratic Party / Management January to May 2017; (2) – Marco Antônio de Mattos / Cardiologist / Municipal Public Servant Management May/2017 to July/2018; (3) – Ana Beatriz Busch Araújo / Anesthesiologist / Management since July 2018	Political instability in central health management in Rio de Janeiro and technical instability in Primary Health Care
	Change of Undersecretary of Health Promotion, Primary Care and Health Surveillance (SUBPAV) on 03 occasions	
	Undersecretary of Hospital, Urgency and Emergency Care (SUBHUE) stay even with the replacement of municipal management	
Allocative Resources	12% reduction in revenues due to health-related constitutional and legal taxes for actions and public health services in the municipality of Rio de Janeiro in the last five years	Low priority given by municipal health management
	16% decrease in Federal Government funds transfers over the last five years	
	Decreased percentage of own resources invested in public health actions and services in the municipality of Rio de Janeiro.	

Captions: SUBPAV: Undersecretariat for Health Promotion, Primary Care, and Health Surveillance; SUBHUE: Undersecretariat of Hospital, Urgency and Emergency Care.
Source: Own elaboration. Official Gazette of the Municipality of Rio de Janeiro.

to maintain investment despite the crisis. By systematizing the conceptual elements of the Structuring Theory, we found that the circumstances of the municipality's management actions were supported by different rules and resources that affected health care. However, it is essential to consider that institutional analysis transcends the municipal level action.

Well-implemented social and economic policies improve health and reduce inequalities[22]. Austerity and the neoliberal reform landscape in Europe are threatening the sustainability and universality of universal systems[23,24].

In the national scenario, the EC 95/2016 and the new National Primary Care Policy (PNAB)[25] were identified as conditioning factors in the directions adopted in the health policy of the municipality of Rio de Janeiro during the analyzed period. EC 95/2016 is the result of a contested diagnosis of fiscal imbalance, represents what has been understood as a rationalizing economic measure. The freezing of the federal health and education budget may cause an estimated withdrawal of about US$ 200 billion from the SUS budget[26] over the next 20 years. The latest version of the PNAB puts at risk the advances made by the ESF, such as care universality, integrality, and equality[27]. Besides enhancing the lack of care, it enables policy choices that prioritize resources for medium and high complexity over PHC[27].

Final considerations

The financial crisis announced by the municipal manager in Rio de Janeiro is a political and social crisis. Austerity implied a reduction in health system performance and elected to disrupt the centrality of the primary care consolidation agenda with a realignment of emphasis on hospital care.

The representativeness of the municipality before the country increases the risk of a constitutional right to health lability, deteriorating the meaning of the outcomes presented.

Among the study limitations is the restricted time interval of analysis, assuming a setback in the health benefits from the newly implemented ESF if the current divestment persists.

The SUS at risk is an invaluable loss, and the panorama recently experienced in Rio de Janeiro is a threat to a population living with all the social and environmental ills of the large metropolises. The possible proposal to unlink the health budget is an extensive deterioration of the current scenario.

Collaborations

All authors worked equally on research design, data collection and analysis, and final drafting of the paper.

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