

Analysis of the Unified Health System funding and expenditure in the municipalities of the “Rota dos Bandeirantes” health region, State of São Paulo, Brazil

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Abstract *The national scenario of lack of resources in the Brazilian Unified Health System (SUS) has led to major differences in the municipalities funding models. Thus, this study aims to analyze SUS funding and expenditure in seven cities of the Rota dos Bandeirantes health region, State of São Paulo, SP, Brazil, from 2009 to 2012. Settled expenditure indicators were collected from the Public Health Budgets Information System (SIOPS) for analysis, showing descriptive data with absolute and relative frequency calculations. We identified that the per capita income available for the city of Barueri is almost tenfold that of the city of Carapicuíba, and that Barueri’s health expenditure per capita is more than double that of the regional average and almost fivefold that of Carapicuíba. The Federal Government is responsible for 95.4% of all funding to municipalities. Most of the available income of the municipalities in the region include their own taxes and state transfers. All the municipalities showed a significant positive trend, both for available income and health expenditure. The regional average of own revenue spent on health is 27.3%. Carapicuíba achieved a level of 37.5%, which is much higher than the minimum of 15% required by the Federal Constitution.*

Key words *Health care funding, Health expenditure, Unified Health System*

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Introduction

Since the Health Reform implemented in Brazil in the midst of the 1970s and 1980s economic and political crisis, idealizers of this movement were already faced with a funding dilemma^{1,2}. The Health Reform movement resulted in the establishment of the Unified Health System (SUS) by the 1988 Federal Constitution and, twenty-eight years later, its funding remains unclear¹⁻¹⁰.

We can say that most of the structural problems that plague the SUS today are related to funding^{5,7,8,11,12}. It is so hard to find an ideal way to fund the health system and, in the 1990s and 2000s, this was one of the most debated and problematic issues in the implementation of the SUS, and, recently, has appeared in the research agendas with almost the same frequency as healthcare model studies^{1,5,8,11}.

While it is recognized that there are expenditure management issues, it is clear that the system that is intended to be “universal” and “comprehensive” is operating with funding far below the required level^{2,5}. This situation has directly hampered SUS municipal managers’ priority of a primary health care (PHC) policy for the implementation of a new Brazilian health care model.

This policy was especially developed in the 1990s, when great efforts were made to universalize PHC, and this process developed over the 2000s. In 2011, the National Council of Municipal Health Secretariats (CONASEMS) strengthened its advocacy for the qualification of PHC in this system, so that it could coordinate comprehensive health care and develop care networks¹³. However, the implementation of this guideline has faced hurdles through SUS problematic funding. The sizeable difference in the municipal collection power and the availability of resources for health, combined with other factors, have made municipal public health systems totally heterogeneous^{1,7,14}, producing equally heterogeneous health regions¹⁵. Thanks to health municipalization and decentralization, followed by the late, and still not effective effort to strengthen health regions^{14,16-20}, we live today a reality where the municipality is considered the basic organizational core of the system¹⁶. This situation produced a segmentation of the health system into national subsystems, a factor that influences the fragmentation of the SUS in the name of municipal autonomy^{16,19,20}. SUS fragmentation has generated local inequities¹⁵⁻¹⁷ that are evident when analyzing SUS funding and expenditure in the municipalities.

Therefore, this study analyzes SUS funding and expenditure, showing the different funding patterns and the different public health expenditure models of the seven municipalities of the Rota dos Bandeirantes health region, State of São Paulo, from 2009 to 2012.

Methodology

This is an analytical, retrospective and cross-sectional quantitative study on the seven municipalities of the Rota dos Bandeirantes health region from 2009 to 2012, using secondary public domain data. The Rota dos Bandeirantes health region consists of the municipalities of Barueri, Carapicuíba, Itapevi, Jandira, Osasco, Pirapora do Bom Jesus and Santana de Parnaíba. These municipalities were characterized through the 2014 Rota dos Bandeirantes Region Health Map²¹.

Data compilation and analysis was followed to analyze funding and health expenditure of these municipalities, similar to other studies^{22,23}, using the results of the 2009-2012 indicators from the Public Health Budgets Information System (SIOPS) made available by the Ministry of Health through the SUS Information Technology Department (DATASUS) on the Health Portal. Indicators used were as follows: tax revenue and legal constitutional transfers per capita; Percentage of own tax revenue over tax revenue and legal constitutional transfers; Percentage of the Municipal Participation Fund (FPM) revenue over tax revenue and legal constitutional transfers; Percentage of Tax on Operations related to the Circulation of Goods and on the Provision of Interstate and Intercity Transport and Communication Services (ICMS) revenue over tax revenue and legal constitutional transfers; Percentage of transfers from the federal government to the SUS over total SUS transfers; Per capita income from SUS transfers; Total expenditure on health per capita; Percentage of own resources spent on health; Percentage of personnel expenditure over total health expenditure; Percentage of expenditure on outsourced services – legal entities over total health expenditure and percentage of investment expenditure over total health expenditure.

Indicators used for the analysis of municipal funding and expenditure were collected by SIOPS²⁴. Website <http://portalsaude.saude.gov.br/index.php/o-ministerio/principal/siops> was first accessed to obtain these data. Then, the fol-

lowing search strings were selected: “indicators”, “municipalities”, “consultation per stage of expenditure”, “2002 onwards annual” and “settled expenditure”. The budgetary data (revenues and expenses) shown in the tables and charts were deflated using the General Price Index-Internal Availability (IGP-DI) of the Getúlio Vargas Foundation, converted to December 2012 values.

Results

The Rota dos Bandeirantes health region consists of the municipalities of Barueri, Carapicuíba, Itapevi, Jandira, Osasco, Pirapora do Bom Jesus and Santana de Parnaíba, which are located to the west of the metropolitan region of São Paulo, in a contiguous region and of geographically close municipalities, but with profound differences (including demographic differences), with 16,238 inhabitants in Pirapora do Bom Jesus, 110,842 inhabitants in Jandira, 113,945 inhabitants in Santana de Parnaíba, 206,558 inhabitants in Itapevi, 373,358 inhabitants in Carapicuíba and 668,877 inhabitants in Osasco.

The Rota dos Bandeirantes municipalities are also different in the way they build their political and economic processes, but their interests converge with regard to services, trade and employment, which transcend the boundaries of municipalities, creating a dynamic coexistence network. Due to their own characteristics, some municipalities are still quite dependent on jobs, health and services in general. The production of wealth generated by the region has not been equally distributed among the municipalities, where areas of great purchasing power coexist with areas of extreme poverty.

The heterogeneity of the Rota dos Bandeirantes municipalities is also evident when observing the 2010 Human Development Index (HDI). Pirapora do Bom Jesus has the lowest HDI of the region (0.727), ranking 418th in the State of São Paulo’s municipalities ranking, followed by Itapevi (0.735), ranking 345th, Carapicuíba (0.749), ranking 236th, and Jandira (0.760), ranking 164th, very far from Barueri and Santana de Parnaíba, with HDIs of 0.786 and 0.814, respectively, ranking 47th and 9th in the State of São Paulo municipalities ranking.

When evaluating the available per capita income of each municipality (Table 1), which are the available funds to implement public actions and services for the population of its territory, a very large inequality is identified between Barueri’s

income, which is almost tenfold that of Carapicuíba, which has the lowest available income in the region. The municipality of Santana de Parnaíba also has an available per capita income above regional average, and more than double that of Osasco that ranks third in the region in this category. Available income increased almost every year and in all assessed municipalities, with an average growth of around 30%, when comparing to the first evaluated year (2009) with the last evaluation year (2012). In Pirapora do Bom Jesus, this available income growth was 64.27%, whereas Itapevi reported a level of 46.69%. The municipality with the lowest increase in available income was Jandira, with 12.10%.

The structure of the available income of the municipalities of the region in the period studied, considering the local municipality taxes collected, the constitutional state transfers of the Tax on Operations related to the Circulation of Goods and on the Provision of Interstate and Intercity Transport and Communication Services (ICMS) and the federal constitutional transfers of the Municipal Participation Fund (MPF) are shown in Table 2. It can be observed that, in the average and in all the years studied, municipalities of the region are highly dependent on own taxes and ICMS, and the only municipality with great FPM-dependence is Pirapora do Bom Jesus.

The percentage of Federal Government’ and State’s share in transfers to the SUS of municipalities of the region shows the importance of these remittances in municipal health financing. According to information provided by SI-OPS, in the average of the four years studied, the Federal Government’s share of SUS transfer was 95.40% compared to 4.60% of State transfers to the municipalities of the region. Federal Government-State distribution was as follows: Barueri, 98.20%-1.80%; Carapicuíba, 90.80%-9.20%; Itapevi, 86.40%-13.60%; Jandira, 99.00%-1.00%; Osasco, 97.40%-2.60%; Pirapora do Bom Jesus, 89.00%-11.00%; and Santana de Parnaíba, 99.00%-1.00%.

In the years 2009 to 2012, the average Federal Government and State per capita transfers to the SUS of the municipalities of the region enables a better understanding of the impact of federal and state transfers directly on the service to cities residents.

The average Federal Government-State per capita amount distribution over the four assessed years was as follows: Barueri, R\$ 130,90-R\$ 2.29; Carapicuíba, R\$ 64.40-R\$ 6.43; Itapevi, R\$ 70.00-R\$ 11.59; Jandira, R\$ 129.20-R\$ 1.33; Osasco,

Table 1. Available per capita income from taxes and constitutional and legal transfers, by municipality and health region, in the period from 2009 to 2012 (in Reals of Dec/2012*).

Municipalities/ Health Region	2009	2010	2011	2012	Municipal Average 2009 to 2012
Barueri	4.986,35	4.872,90	6.038,65	6.228,29	5.531,55
Carapicuíba	526,05	556,78	638,25	675,63	599,18
Itapevi	878,33	879,57	1.172,68	1.288,38	1.054,74
Jandira	1.013,81	1.067,49	1.190,16	1.136,46	1.101,98
Osasco	1.203,37	1.376,43	1.580,30	1.641,96	1.450,51
Pirapora do Bom Jesus	976,13	1.237,17	1.518,73	1.603,51	1.333,89
Santana de Parnaíba	2.809,16	2.707,02	3.113,18	3.479,95	3.027,33
Region Average	1.666,82	1.723,93	2.032,04	2.129,20	1.888,00

* Deflator IGP-DI – FGV.

Source: SIOPS.

Table 2. Level of dependence, as a percentage, of the municipalities' available income in relation to taxes collected by the municipality, state constitutional transfers of the ICMS and the federal constitutional transfers of the FPM, by municipality and health region, in the period from 2009 to 2012.

Municipalities/ Health Region	Period				Municipal Average 2009 to 2012
	2009	2010	2011	2012	
Barueri					
Local Taxes	43,21	46,37	46,93	48,99	46,38
ICMS	49,55	45,93	46,12	43,52	46,28
FPM	3,45	3,23	2,93	3,50	3,28
Carapicuíba					
Local Taxes	29,77	31,77	35,55	37,93	33,76
ICMS	32,97	31,15	32,73	30,81	31,91
FPM	25,64	23,51	17,04	18,49	21,17
Itapevi					
Local Taxes	29,85	29,15	28,99	26,81	28,70
ICMS	36,72	39,20	43,54	50,18	42,41
FPM	29,17	25,87	22,44	18,12	23,90
Jandira					
Local Taxes	23,78	29,62	27,53	27,04	26,99
ICMS	39,06	39,73	38,36	40,31	39,36
FPM	29,96	22,89	26,61	27,55	26,75
Osasco					
Local Taxes	56,08	55,57	53,73	52,37	54,44
ICMS	35,14	31,90	32,37	34,68	33,52
FPM	5,58	4,76	5,45	4,85	5,16
Pirapora do Bom Jesus					
Local Taxes	40,69	22,82	21,89	23,90	27,33
ICMS	24,68	26,87	35,73	26,27	28,39
FPM	29,83	47,32	47,26	46,17	42,64
Santana de Parnaíba					
Local Taxes	59,14	58,18	55,69	52,83	56,46
ICMS	23,56	23,84	28,18	28,75	26,08
FPM	9,23	9,30	7,91	8,89	8,83
Region Average					
Local Taxes	46,10	47,63	46,96	47,13	46,95
ICMS	40,33	37,60	38,76	38,69	38,84
FPM	8,81	8,03	7,66	7,68	8,04

Source: SIOPS.

R\$ 98.40-R\$ 2.63; Pirapora do Bom Jesus, R\$ 127.70-R\$ 18.80; Santana de Parnaíba, R\$ 75.90-R\$ 0.69. In the regional average, municipalities received R\$ 93.30 from the Federal Government and R\$ 4.34 from the State. It is worth reminding that data originated from SIOPS and that all these values were deflated for December 2012 to facilitate comparison between them.

Total municipal health expenditure comprises municipal public authority funds directly spent by the Municipal Health Secretariat and includes, besides municipal own funds, transfers from federal and state governments, since they are accounted for in the municipal budget. Table 3 shows municipalities' total annual health expenditure per capita and the average of the four years studied. Worth noting is the difference between the municipalities of Barueri and Santana de Parnaíba against the regional average and the remaining municipalities, as well as, with the exception of Jandira and Pirapora do Bom Jesus, the increasing trend of total SUS expenditure per capita in all other municipalities analyzed.

The analysis of health expenditure with own resources (Table 4), assessed SUS expenditure excluding SUS transfers from other federated entities and including only municipal own resources, that is, those from municipal taxes and legal constitutional transfers, both shown by per capita amount and by the percentage that demonstrates compliance with the provisions of Complementary Law 141 of January 13, 2012²⁵, which determines that municipalities must spend least 15% of their tax revenues and constitutional transfers.

Table 4 shows the increasing trend of health expenditure with own resources in all municipal-

ities evaluated and the percentage spent on health through municipalities' own revenue, evidencing the level of municipality commitment in health actions and services. Worth highlighting are the regional average, which is almost double the minimum required by law and the difference in the per capita amount of Barueri and Santana de Parnaíba compared to the remaining municipalities in the region, as well as the high percentage of commitment of own revenue of Carapicuíba, Itapevi, Osasco and Pirapora do Bom Jesus.

Table 5 shows the purpose of health funds' expenditure in the municipalities of the region in the years studied. It was possible to observe that, in the regional average and in all the years studied, most funds were allocated to personnel expenses.

Discussion

SUS underfunding has been occurring since its inception, and this situation exacerbates in times of crisis, due to undefined systematic and adequate funding source and by drastic cuts that do not spare health when finances are tight. Analyzing SUS funding and expenditure in municipalities is a way of portraying the real situation of public financing at the source, where things happen and where the population really feels hardships of accessing public health services, and thus, exposing difficulties, differences and models adopted, proposing solutions that can contribute to the consolidation of the SUS.

The reason for choosing the Rota dos Bandeirantes health region for study was precisely due

Table 3. Total SUS municipal per capita expenditure, by municipalities and health region in the period from 2009 to 2012 (in Reals of Dec/2012*).

Municipalities/ Health Region	2009	2010	2011	2012	Municipal Average 2009 to 2012
Barueri	1.179,97	1.171,85	1.507,73	1.557,47	1.354,25
Carapicuíba	247,65	267,12	286,45	364,74	291,49
Itapevi	383,17	396,48	503,91	573,79	464,34
Jandira	395,67	313,88	350,59	385,64	361,44
Osasco	501,40	554,38	674,88	668,66	599,83
Pirapora do Bom Jesus	625,99	502,58	569,89	555,98	563,61
Santana de Parnaíba	592,91	681,55	931,72	1.033,10	809,82
Region Average	534,14	558,90	683,49	722,59	624,78

* Deflator IGP-DI – FGV.

Source: SIOPS.

Table 4. SUS per capita expenditure with municipal own resources and proportion of municipality's own revenue invested in health, by municipalities and health region in the period from 2005 to 2012 (in Reals of Dec/2012*).

Período Municipalities/ Health Region	2009		2010		2011		2012		Municipal Average 2009 to 2012	
	Per capita	%	Per capita	%	Per capita	%	Per capita	%	Per capita	%
Barueri	1.046,42	20,99	1.062,98	21,81	1.370,33	22,69	1.387,48	22,28	1.216,80	21,94
Carapicuíba	181,60	34,52	204,38	36,71	223,98	35,09	295,24	43,70	226,30	37,51
Itapevi	312,55	35,59	307,13	34,92	392,31	33,45	471,05	36,56	370,76	35,13
Jandira	255,05	25,16	177,19	16,6	224,29	18,85	265,72	23,38	230,56	21,00
Osasco	411,97	34,23	437,56	31,79	536,52	33,95	527,67	32,14	478,43	33,03
Pirapora do Bom Jesus	420,37	43,06	406,28	32,84	388,02	25,55	412,21	25,71	406,72	31,79
Santana de Parnaíba	522,08	18,59	603,62	22,3	845,38	27,15	920,53	26,45	722,9	23,62
Region Average	534,14	26,54	558,90	26,65	683,49	27,98	722,59	28,21	624,78	27,35

* Deflator IGP-DI – FGV.

Source: SIOPS.

to the great heterogeneity of its municipalities, their different collection patterns and the different models of public health expenditure management. The period 2009-2012 was set for the study as the last completed period of municipal government management.

The analysis of the municipal available revenue (Table 1) and the public health expenditures (Table 3) evidences a direct relationship between both, that is, the higher the available income, the higher the public health expenditure, corroborating a study by Ferreira²⁶. We also note a great disparity in the available municipal income, leading to heterogeneous ways of offering services to the population, both in health and in other areas, directly reflecting in the quality of public actions and services, including in health, producing islands of prosperity surrounded by misery on all sides. This heterogeneity and fragmentation of the Brazilian public health system caused by the centralization of the municipality as the basic organizational core of the system¹⁶ and by the delay in recognizing and effecting regionalization as the only way to integrate a system that is segmented into 5,570 municipal systems and 27 state systems^{14,16-19} has caused such an abyssal inequity between municipalities and between health regions that the SUS of a municipality or a region is definitely not the same SUS of other municipalities or region.

When analyzing the level of dependence of the available income of municipalities that make up the Rota dos Bandeirantes health region (Table 2), we also note another large difference in the composition of revenue. The region has municipalities with great financial autonomy in the generation of their income and therefore greater possibility of implementing public policies, as in the case of Santana de Parnaíba, Osasco and Barueri, where approximately half of revenues consists of own taxes, while other municipalities own taxes revenue is around 30%, thus with a reduced possibility of implementing public policies.

There are also municipalities such as Pirapora do Bom Jesus, whose revenue consists of more than 42% from the Municipal Participation Fund (FPM). Some studies^{22,23} point out that FPM-dependence is more significant in municipalities with low numbers of inhabitants because the FPM distribution criterion is based on municipal population brackets.

Municipalities of the region are highly dependent on state ICMS transfers (over 25%), in all evaluated years and in all municipalities, including Pirapora do Bom Jesus, whose population is less than twenty thousand inhabitants. ICMS transfers tend to benefit densely populated municipalities with a more solid economic base and greater commercial activity and service production²². However, this work identified per-

Table 5. Percentage share of personnel and third party services expenditure – legal entity, and expenditure on investments under total health expenditure, by municipalities and health region in the period from 2009 to 2012.

Municipalities/ Health Region	Period				Municipal Average 2009 to 2012
	2009	2010	2011	2012	
Barueri					
Personnel	29,39	38,39	38,64	41,89	37,08
Outsourced	59,93	51,71	49,28	46,86	51,95
Investments	1,34	0,70	2,47	2,14	1,66
Carapicuíba					
Personnel	59,42	60,27	71,60	60,01	62,83
Outsourced	9,99	7,00	7,72	9,48	8,55
Investments	2,79	1,58	4,67	8,77	4,45
Itapevi					
Personnel	68,02	67,18	62,83	68,55	66,65
Outsourced	13,47	11,92	13,27	11,85	12,63
Investments	1,90	3,29	5,84	2,68	3,43
Jandira					
Personnel	42,90	67,80	62,74	49,92	55,84
Outsourced	15,44	12,44	16,97	14,02	14,72
Investments	4,14	2,35	1,57	2,77	2,71
Osasco					
Personnel	61,29	57,04	60,04	60,62	59,75
Outsourced	18,90	18,67	13,68	16,03	16,82
Investments	1,37	3,50	2,74	3,44	2,76
Pirapora do Bom Jesus					
Personnel	54,47	53,99	57,88	62,08	57,11
Outsourced	11,41	27,21	28,97	14,69	20,57
Investments	1,37	0,95	0,95	0,31	0,90
Santana de Parnaíba					
Personnel	70,65	69,93	67,41	55,87	65,97
Outsourced	14,44	15,99	17,46	24,84	18,18
Investments	1,24	2,06	5,38	8,58	4,32
Region Average					
Personnel	50,99	53,74	55,39	54,79	53,73
Outsourced	30,42	26,81	24,75	25,08	26,77
Investments	1,66	2,25	3,28	3,99	2,80

Source: SIOPS.

centages of the composition of available revenue through ICMS transfers below the regional average in the municipality of Osasco, which is the most densely populated of the region, with a very solid economic base and with great commercial activity and services. This discrepancy is justified by the large tax collection capacity with own taxes, which alone is more than half of the available income of Osasco, making the ICMS transfer

lower than the regional average, percentage wise.

The Federal Government is, after the municipality itself, is the great financier of public health in the municipalities studied, in which more than 95% of transfers to the SUS of these municipalities derive from federal funds and less than 5% from State resources. Transfers made directly by the State Health Fund (FES) to the Municipal Health Fund (FMS) are negligible in the municipalities of

the region; in some years and for some municipalities of the region, there were no transfers from State to municipality. A study by Mendes et al.²³ carried out throughout the metropolitan region of São Paulo reached the same conclusion, making it clear that fund-to-fund transfers to the SUS of municipalities through its State Health Secretariat of São Paulo (SES-SP) is not a policy of the government of the state of São Paulo. These findings are also corroborated by Leite et al.²⁷, in a study on 14 municipalities in the state of Rio Grande do Norte, which also pointed to increased share of municipalities in the composition of funds, with a negligible State participation.

It is important to take into account that SES-SP has a large structure of services managed directly or through Social Health Organizations (OSS), which serve the population of the Rota dos Bandeirantes health region. However, this study could not establish SES-SP's indirect expenses in the municipalities and only considered municipal expenditure directly through the FMS.

Transfers to the SUS of the municipalities also show different levels of participation of the State and the Federal Government when analyzed per capita. The average per capita SUS transfers to the municipalities of the Rota dos Bandeirantes health region in the period 2009-2012 shows that Barueri has received more funds proportionally to its population, followed by Jandira. According to Ferreira²⁶, SUS transfers per capita are proportional to the size of the municipality, with the exception of municipalities with less than ten thousand inhabitants and that, based on this fact, large urban clusters tend to spend more in terms of health per capita. While Barueri is not small, Osasco is relatively larger in both population and installed capacity, and ranks fourth in this segment. Jandira, which is second-to-last in terms of population, ranks second in transfers per capita, followed by Pirapora do Bom Jesus, whose population is less than twenty thousand inhabitants. We need to consider that "adherence" of municipalities to policies and programs that bring federal incentives is an independent decision and has direct bearing on the level of Federal Government transfers to municipalities.

The analysis of SUS transfers per capita shows that municipalities with a smaller structure, such as Carapicuíba and Itapevi benefit from lower funds levels proportionally to their population, certainly due to the installed capacity and the production historical series of these municipalities. Other authors^{23,27} have reached similar conclusions.

With regard to total health expenditure (Table 3), there was an increase of more than 35% in the region's expenditure when comparing 2009 with 2012. This is a significant increase, considering that, at the time of IBGE's 2010 demographic census, a reduced population was noted in all municipalities in the region. This increased expenditure occurs in most Brazilian municipalities as already identified in another study²⁷.

It is worth noting that the per capita expenditure calculation considers only the official population, without taking into account health users from other municipalities that end up using the services offered. The municipality of Barueri, which had the highest total per capita expenditure, due to its large service structure, ends up providing care to a large number of health users from neighboring municipalities, mainly through its emergency care units, and this serviced population is not included in the calculation of its total expenditure per capita. The municipality of Carapicuíba, which had the lowest per capita health expenditure, has in the region and even within its own territory state services in place to provide care to its population, and this indirect State expenditure with the population of Carapicuíba does not appear in this account. These considerations apply to all other municipalities, since no municipality has such a self-sufficient health system that it does not use any service from other municipalities or under state or federal management to provide comprehensive services to its citizens.

When assessing the percentage of expenditure with own revenues, that is, without considering expenses with health-linked revenues, one can see the level of endeavors of municipalities to maintain their health system (Table 4). The regional average is 27.35%, but the average of the four years studied reaches 37.51% in Carapicuíba; 35.13% in Itapevi; 33.03% in Osasco and 31.79% in Pirapora do Bom Jesus, while municipalities that evidenced the highest per capita health expenditure as Barueri committed, on average, 21.94% of their own revenues, and Santana de Parnaíba, which has the second largest per capita health expenditure in the region, committed 23.62% of its own revenue.

Health expenditure at levels above 30% of own income make the municipality administration impracticable and lead to not having resources for investments in other areas such as maintenance of public roads, security, the environment and others, since education minimally consumes 25% of tax revenues and constitutional transfers.

Services backed by exorbitant expenditure to the detriment of developing other essential services should be a constant concern of the public manager²⁸. Thus, public policies geared to reduce this great pressure on budgets of municipalities that have a lower collection should be in place. One way to relieve this pressure is through increased expenditure on health by the Ministry of Health, which is the government sphere that has a constitutional commitment to increase its share of health expenditure, thus settling a historical debt of those who proportionately have already spent more on health²⁹. It is worth recalling that two Proposals of Amendment to the Constitution N° 143 (PEC 143) and 241 (PEC 241) are being discussed in the National Congress, which, if approved, will further reduce Federal Government's health expenditure.

This study shows that, in the regional average of the four years studied, more than half of health expenditure (53.73%) was allocated to personnel and 26.77% to outsourced services. A slight increase in personnel expenses and a slight decrease in outsourcing expenses was noted between 2009 and 2012 (Table 5). The analysis of health expenditure allocation according to its purpose enables to identify the management model adopted by municipal governments vis-à-vis human resources, whether own staff or outsourced personnel. The higher share of personnel expenses indicates that the municipality adopted the direct recruitment of personnel through public positions or jobs and the higher share of outsourced services indicates that the municipality chose not to use direct personnel recruitment, but rather contracting outsourced companies and/or establishing partnerships with not-for-profit private entities.

It can be said that, with the exception of the municipality of Barueri, which adopted a model of outsourcing of support services and partnerships through covenants and management agreements with private entities that manage some municipal services, at least in the period analyzed, the other municipalities adopted an eminently traditional model through the establishment and provision of public positions and jobs, corroborating other studies^{22,23}.

The reason why Barueri adopted an outsourcing model is possibly the same as that of most Brazilian municipalities that are worried about not violating Complementary Law No. 101/2000³⁰, called the Fiscal Responsibility Law (LRF), which limits municipal personnel expenses to 54% of net current revenue, at the risk

of committing public finance crimes. Bills have been submitted to National Congress to relax LRF's limits and even to exclude resources allocated to public health actions and services³¹ from personnel expenses brackets.

Investment expenditure during this period was very low in the municipalities of the region, which shows that municipal management is allocating few resources for the acquisition of permanent assets such as medical and hospital equipment, computers, furniture, etc., as well as for the construction of new facilities or expansion of units within own properties. Curiously, the municipality that spent the most health funds on new investments in this period was Carapicuíba, with 4.45%, followed closely by Santana de Parnaíba, with 4.32%. Other studies^{22,23} also found this small share of investments in the municipalities analyzed.

Final considerations

In health policy evaluation, the municipality should be vigilant for its health funding and expenditure standard. The municipal manager's evaluation is essential, since he assumes responsibility for all public health actions and services within his territory, especially primary health care policy. Thus, it would be important for municipal managers to master this realm in order to ensure an evaluation of the municipal SUS to improve its results.

This article sought to evaluate municipal funding and expenditure with this purpose in mind, considering the important tool of SIOPS, little used for that purpose. As a management tool, this system supports the municipal manager's decision-making with regard to allocated and spent resources to better respond to the health needs of the local population.

Based on the analysis of the seven municipalities in the Rota dos Bandeirantes health region, we can conclude that there are large disparities in health funding and spending, with a significant discrepancy in available income per capita and per capita health expenditure by the municipalities in the region. These differences show that, in addition to insufficiency, there is a poor distribution of available resources, making the system heterogeneous and fragmented.

The SUS devised by leaders of the Health Reform movement was of a universal public health system, and not only for residents of municipalities with high capacity to collect funds. Networks

regionalization and organization were in place since their idealization in the Health Reform, and is provided in the Federal Constitution, however, its effective implementation has not occurred yet.

In the Brazilian federative model, where the municipality is an independent federated entity, as are State and the Federal Government, it is impossible to conceive a regional autonomy, without this health region really having the tools to exercise this autonomy in the integration of the system. The system's effective regionalization through the strengthening of health regions, with the power to network existing services in the re-

gion more efficiently and with economies of scale and scope facilitating access and achieving maximum comprehensiveness within the region seems to be the only way toward a truly national SUS.

We suggest that public policies be implemented to eliminate or minimize discrepancies among Brazilian municipalities in order to meet their needs, both in financial resources for health actions and in management improvement technologies to make better use of available resources. We also recommend the improvement of information systems, especially with regard to the State's indirect expenses in the municipalities.

Collaborations

JA Santos Neto contributed to data collection and review. AN Mendes contributed to study design and final wording. AC Pereira contributed to the final wording. LR Paranhos contributed to collected data arrangement and final wording.

References

1. Espírito Santo ACG, Tanaka OY. Financiamento, gasto e oferta de serviços de saúde em grandes centros urbanos do estado de São Paulo (Brasil). *Cien Saude Colet* 2011; 16(3):1875-1885.
2. Mendes A. A longa batalha pelo financiamento do SUS. *Saúde Soc.* 2013; 22(4):987-993.
3. Benevides RPS. *Financiamento do SUS na região metropolitana do Rio de Janeiro nos anos 2000* [dissertação]. Rio de Janeiro: Universidade do Estado do Rio de Janeiro; 2010.
4. Gonçalves RF, Bezerra AFB, Espírito Santo ACG, Sousa IMC, Duarte-Neto PJ, Brito e Silva KS. Confiabilidade dos dados relativos ao cumprimento da Emenda Constitucional nº. 29 declarados ao Sistema de Informações sobre Orçamentos Públicos em Saúde pelos municípios de Pernambuco, Brasil. *Cad Saude Publica* 2009; 25(12):2612-2620.
5. Mendes A, Marques RM. O financiamento do SUS sob os “ventos” da financeirização. *Cien Saude Colet* 2009; 14(3):841-850.
6. Mendes A, Leite MG, Marques RM. Discutindo uma Metodologia para a Alocação Equitativa de Recursos Federais para o Sistema Único de Saúde. *Saúde Soc.* 2011; 20(3):673-690.
7. Espírito Santo ACG, Fernando VCN, Bezerra AFB. Despesa pública municipal com saúde em Pernambuco, Brasil, de 2000 a 2007. *Cien Saude Colet* 2012; 17(4):861-871.
8. Marques RM, Mendes A. A problemática do financiamento da saúde pública brasileira: de 1985 a 2008. *Econ Soc.* 2012; 21(45):345-362.
9. Pinheiro Filho FP, Sarti FM. Falhas de mercado e redes em políticas públicas: desafios e possibilidades ao Sistema Único de Saúde. *Cien Saude Colet* 2012; 17(11):2981-2990.
10. Mendes EV. 25 anos do Sistema Único de Saúde: resultados e desafios. *Estud Av.* 2013; 27(78):27-34.
11. Santos NR. SUS, política pública de Estado: seu desenvolvimento instituído e instituinte e a busca de saídas. *Cien Saude Colet* 2013; 18(1):273-280.
12. Rosa MRR, Coelho TCB. O que dizem os gastos com o Programa Saúde da Família em um município da Bahia? *Cien Saude Colet* 2011; 16(3):1863-1873.
13. Conselho Nacional das Secretarias Municipais de Saúde (CONASEMS). *A Atenção Básica que queremos*. Brasília: Editora Conasems; 2011.
14. Duarte LS, Pessoto UC, Guimarães RB, Heimann LS, Carvalheiro JR, Cortizo CT, Ribeiro EAW. Regionalização da saúde no Brasil: uma perspectiva de análise. *Saúde Soc.* 2015; 24(2):472-485.
15. Viana ALD, Bousquat A, Pereira APCM, Uchimura LYT, Albuquerque MV, Mota PHS, Demarzo MMP, Ferreira MP. Tipologia das regiões de saúde: condicionantes estruturais para a regionalização no Brasil. *Saúde Soc.* 2015; 24(2):413-422.
16. Santos L, Campos GWS. SUS Brasil: a região de saúde como caminho. *Saúde Soc.* 2015; 24(2):438-446.
17. Kuschnir R, Chorny AH. Redes de atenção à saúde: contextualizando o debate. *Cien Saude Colet* 2010; 15(5):2307-2316.

18. Mendes A, Louvison MCP, Ianni AMZ, Leite MG, Feuerwerker LCM, Tanaka OY, Duarte L, Weiller JAB, Lara NCC, Botelho LAM, Almeida CAL. O processo de construção da gestão regional da saúde no estado de São Paulo: subsídios para a análise. *Saúde Soc.* 2015; 24(2):423-437.
19. Shimizu HE. Percepção dos gestores do Sistema Único de Saúde acerca dos desafios da formação das Redes de Atenção à Saúde no Brasil. *Physis* 2013; 23(4):1101-1122.
20. Silva SF. Organização de redes regionalizadas e integradas de atenção à saúde: desafios do Sistema Único de Saúde (Brasil). *Cien Saude Colet* 2011; 16(6):2753-2762.
21. Rede Regional de Atenção à Saúde 05 (RRAS 05). *Mapa da Saúde da Região da Rota dos Bandeirantes*. Osasco: RRAS 05; 2014.
22. Mendes A. *Financiamento, gasto e gestão do Sistema Único de Saúde: a gestão descentralizada semiplena e plena do sistema municipal no Estado de São Paulo (1995- 2001)* [tese]. Campinas: Instituto de Economia, Universidade Estadual de Campinas; 2005.
23. Mendes A, Kudzielicz E, Dimitrov P, Moriya R, organizadores. *Financiamento e Gasto do Sistema Único de Saúde na região metropolitana de São Paulo, 2002-2008*. São Paulo: Observatório de Saúde da Região Metropolitana de São Paulo, FUNDAP; 2010.
24. Sistema de Informações sobre Orçamentos Públicos em Saúde (SIOPS). Dotação atualizada. [acessado em 2015 fev 7]. Disponível em: http://siops-asp.datasus.gov.br/cgi/siops/siops_indic/municipio/anual/prv_index.htm
25. Brasil. Lei Complementar nº 141, de 13 de janeiro de 2012. Regulamenta o § 3º do art. 198 da Constituição Federal para dispor sobre os valores mínimos a serem aplicados anualmente pela União, estados, Distrito Federal e municípios em ações e serviços públicos de saúde e as normas de fiscalização, avaliação e controle das despesas com saúde nas 3 (três) esferas de governo; revoga dispositivos das Leis números 8.080, de 19 de setembro de 1990, e 8.689, de 27 de julho de 1993; e dá outras providências. *Diário Oficial da União* 2012; 16 jan.
26. Ferreira SG. Municípios: despesa com saúde e transferências federais. *Informe-se* 2002; 38(fev.):1-8.
27. Leite VR, Lima KC, Vasconcelos CM. Financiamento, gasto público e gestão dos recursos em saúde: o cenário de um estado brasileiro. *Cien Saude Colet* 2012; 17(7):1849-1856.
28. Greiling D. Performance measurement: a remedy for increasing the efficiency of public services. 2006. *Int J Product Performance Manag* 2006; 55(6):448-465.
29. Carvalho G. A saúde pública no Brasil. *Estud. Av.* 2013; 27(78):7-26.
30. Brasil. Lei Complementar nº 101, de 4 de maio de 2000. Estabelece normas de finanças públicas voltadas para a responsabilidade na gestão fiscal e dá outras providências. *Diário Oficial da União* 2000; 5 maio.
31. Mendes A. Limite de Gasto com Pessoal na Saúde pela LRF: uma barreira à construção do SUS público, integral e de qualidade. *Domingueira da Saúde do Idisa* 2015; 5(1):1-4.

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