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Themes and Reform of Primary Health Care (RCAPS) in the city of Rio de Janeiro, Brazil

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Abstract *During the period of 1990-2000, Rio de Janeiro was characterized by a limited supply of public and universal primary care services. In 2008, family health team coverage corresponded to 3.5% of the population, the lowest among capital cities. At the end of 2013, coverage reached more than 40% of Rio residents with teams comprised of doctors, nurses, practical nurses, community health agents, and health surveillance agents, in addition to oral health teams. This article describes and analyzes the main components of the Reform in Primary Health Care (RCAPS) implemented since 2009, focusing on three lines of action: administrative reform, organizational model, and model of care. A new organizational chart of the Municipal Health Secretary and a legal framework for a new results-based model were created. As for the model of care, the standardization of procedures and health activities for all units and the monthly assessment of clinical indicators of results of implanted electronic medical records were created. Experience has shown the feasibility of RCAPS, pointing to new challenges that will allow consolidation of the expansion of access, training of human resources, health communication, and a shift to a managerial results-driven model.*

Key words *Primary health care, Health assessment, Administrative reform*

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Introduction

In spite of the clear constitutional principles of 1988, the city of Rio de Janeiro has stood out since the decades of the 1990s and 2000s for its low level of service expansion of public and universal primary health care. This has been accompanied, on one hand, by a marked reduction in its supply and public funding at the minimal limit established by the constitution, and on the other hand by historic growth in private health plans, as noted by Costa & Pinto[1] and Pinto & Soranz[2].

In 2008, among all the capitals in the country, the municipality of Rio possessed the lowest public funding according to the Public Health Budget System (SIOPS)[3]. In December of the same year, the coverage of Family Health Teams in the city was 3.5% of the population, the lowest among Brazilian capitals, such as, for example, São Paulo (26.6%), Belo Horizonte (71.5%), Porto Alegre (22.3%), and Curitiba (32.6%)[4].

Among the different existing models of health care, primary health care (PHC) as enunciated in the National Policy of Primary Care of the Ministry of Health, and comprised of the Family Health Strategy Teams, was chosen to be the basis of the Reform in Primary Health Care (RCAPS). The main argument was that apart from federal co-funding, various cities in Brazil and throughout the world had already been developing this model with significant results in the improvement of quality of life in their populations.

In May of 2009, in the neighborhood of Santa Cruz – the west side of the city most distant from downtown – the guidelines of the "Present Health" Program were unveiled, in which the Family Health Strategy would come to have new resources of investment and funding for the planned expansion through 2012 in the area of 35%. In the words of the Strategic Plan of the Mayor's Office for the period of 2009-2013, the target was *to increase tenfold the populational coverage of the Family Health Strategy*[5].

In addition to the Strategic Plan, the Municipal Health Plan[6] also contributed to the planning of service expansion for Primary Healthcare in the city, taking the principles described by Starfield[7] and Harzheim et al.[8] as a basis for each health planning area (AP). In Rio, the 160 existing neighborhoods are grouped by the Municipal Health Secretary into ten APs: 1.0 (Downtown and adjacent areas), 2.1 (South Zone), 2.2 (Greater Tijuca), 3.1 (Leopoldina region), 3.2 (Greater Méier), 3.3 (Madureira region and adjacent areas), 4.0 (Jacarepaguá region and adjacent areas), 5.1 (Bangu region and adjacent areas), 5.2 (Campo Grande region and adjacent areas), and 5.3 (Santa Cruz region and adjacent areas).

From the methodological perspective of *policy analysis*[9-11], one problem was outlined in 2008: low coverage of services at the first level of care and less municipal funding among the capitals of the country. Following this, a public policy to be re-implemented, qualified, and broadened was identified: the Family Health Teams as a basis for change. The main argument concerned the issue of federal co-funding and the positive results recorded in the national and international literature. Finally, in the area of policy analysis, a basis for RCAPS was selected that included organizational and administrative changes, as well as changes in the attributes of the healthcare model, as shown in Chart 1.

After five years of municipal administration (2009-2013) it is possible to describe some of the results obtained. The goal of this article is to analyze the experience of Rio in the implementation of a public policy associated with the Healthcare Reform in Primary Care (RCAPS) in the period of 2008 to 2013, which is to say, the period before and after the reform. To understand, describe, and analyze the expansion of coverage of Family Health actions in the city, a documentary analysis was carried out with materials produced by the Municipal Health Secretary, and of the data and information produced in the period from 2008 to 2013[12-15].

To achieve this, a time period was chosen that would allow the "before and after" comparison (as well as over time) of two cycles of municipal administration. The year 2008 closes one cycle of municipal administration (2005-2008) and the years 2009-2012 represent a new cycle of four years with new SMS guidelines. In addition, 2013 is a year of continuity with the previous administration and therefore allows an evaluation of the beginning of a new cycle.

Themes and Reform in Primary Health Care (RCAPS)

We can divide RCAPS into strategic guidelines such as that made by the Undersecretary of Health Promotion, Surveillance, and Primary Care (SUBPAV) for each of the two phases. The first phase includes the period from 2009 to 2012 and was defined using the initial diagnosis of the situation in the transitional government, in which the planning themes considered cor-

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Chart 1. Strategic guidelines in the Reform of Primary Healthcare in Rio de Janeiro, 2009-2015.

2009: THEME 0 – Organizational and administrative change	**Examples of actions**
• Primary care in the "driver's seat"	• Inspiration in the European experiences of Primary Care, in particular the United Kingdom[16] and Portugal[5] for the development of the Reform guidelines.
• Participatory definition of the network, construction of TEIAS	• Work meetings for the construction of the Integrated Territories of Healthcare (TEIAS), beginning with AP 5.3 and 3.2.
• Groundwork for administrative and contracting reform	• Change in the organizational flowchart of the Municipal Health Secretary, Law and Decree of Social Organizations, Administrative Contracts
2010: THEME I – Broadening of access (1st phase)	**Examples of actions**
• Administrative leadership and autonomy	• Selection of leaders for the local administration of APs, implementation of classes in the Specialization in Public Health Course.
• Improvement of accessibility	• Inauguration and implementation of 17 new units in the new Family Clinics.
• Evaluation and monitoring	• Greater periodicity in updating the Health Information Systems, start of issuing the first management reports on the electronic medical records.
• Administration of Information and Communication Technologies in Health (TICs)	• Implementation of electronic medical records in the first APS units.
2011: THEME II – Clinical governance and management of knowledge	**Examples of actions**
• Clinical administration	• Creation of evidence-based protocols in accordance with the reality of Rio's SUS system, computerization of the list of medications (REMUME).
• Knowledge management and training of professionals	• Implementation of the Residency Program in Family and Community Medicine, of the Professional Masters in Primary Healthcare, of the Public Health Specialization Program, of PROFORMAR-RIO, of the Technical Program in Community Health Agents, of the Workshops in Pharmaceutical Care, and the consolidation of the Network of OTICS-RIO Stations.
• Innovation and simplification in care provision	• Standardization of health procedures and actions for all units: portfolio of primary care services.
2012: THEME III – Sustainability and development	**Examples of actions**
• Accreditation of Services	• Certificate of Recognition of Quality Care (CRCQ)
• Financial viability of Primary Care	• Estimate of the monthly costs of each Family Health Team
• Communication with citizens and professionals	• Internet portal for SUBPAV and the online tool "Where to be seen?" that links the address of every person to a Primary Cary unit.

it continues

Chart 1. continuation

2013: THEME IV – Coordination of care and accountability	**Examples of actions**
• Coordination of Care • One-on-one links, organization of user lists • Accountability and transparency in results	• Family doctors, the professionals in charge of each unit, are in charge of regulating procedures and outpatient care. • Workshops with Community Health Agents and Family Health Teams, publication of Statistical and Geographic Reports (CEMAPS-RJ) with maps of the micro-areas and Teams. • Accountability Seminars developed and presented by each health unit.
2014: THEME V – One-hour response and all for SUS	**Examples of actions**
• Responsibilities and individual deliveries • Adequate response time • Service-research interaction	• Job description for each member of the Family Health Team • Study of the wait times for outpatient procedures and exams in the SISREG, SAI-SUS integration, CNES, and the range of openings offered in the SISREG. Integration with hospital and ambulance regulation. • Research assessment utilizing the PCATool with users selected in independent statistical samples, comparable by City Planning Area.
2015: THEME VI – Driving with efficiency	**Examples of actions**
• Financial transparency and discipline • Network of relationships among patients and communities • Creation of the network and lines of care	• Budgetary meetings with each unit • Increasing the supply of vacancies at SISREG and re-contracting of providers. • Management panel for hospital data and management of wait times.

Source: Developed by the authors, based on the administrative planning of SUBPAV/SMS-RJ, 2009-2015.

responded to organizational and administrative change, broadening of access, clinical governance, and management of knowledge, sustainability, and development. The second phase is represented by the initial period of 2013 to 2015, in which are emphasized the components of care coordination and accountability, the "adequate response time," and "all for SUS" (Chart 1).

Administrative and Organizational Reform

The change in the organizational structure that horizontalized the SUBPAV organization chart, which occurred under the governance of the Municipal Health Secretary (SMS), facilitated the baseline structuring for the Reform of Primary Health Care. Furthermore, this was inspired by the models adopted by Portugal beginning in 2005, according to Pisco[17], with the creation of the "Mission for Primary Health Care"[18-20], and in England via the National Health Service[9], which continues to make successive adjustments to its healthcare model since the 1990s[21-24]. In addition, an important collection of European experiences with Primary Care, edited by Saltman et al.[25], was considered and used as a reference in the RCAPS.

Some elements were adapted from Portugal and supported strategies of RCAPS, such as: indicators of pay for performance, the creation of an Observatory of Public Policy – translated in Rio's SMS into a network of decentralized observatories by planning area (PA), the experience of using electronic records in Primary Care and the management of the registry of "duplicates," and studies of the waiting time for consultations, exams, and procedures. From England was taken clinical governance, contractualization of doc-

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tors, and a geo-localization tool for residences using the address of each registered person.

In 2009, the organizational structure of the old Municipal Secretariat of Health (SMS) was altered[12], horizontalizing the organizational chart and placing Primary Care as the main coordinator of the healthcare network of the City (Figure 1). One of the principal alterations was the division of the Undersecretary of Health Actions and Services (SUBASS) into two new undersecretaries. This demonstrated a budgetary division of the costs among the different levels of care, and allowed the planning of expenses, separating the different characteristics of service provision at each level of care.

It was also established that the structure responsible for developing lines of care and special programs would be associated with the Superintendent of Primary Care, previously modeled on other sectors, as in the example of the Management of the Cancer Program directly linked to the Cabinet of the Secretariat, or the "Management of Women's Issues" linked to the Superintendent of Specialized Services, or the "Management of Tuberculose" linked to the Superintendent of Health Surveillance.

All of the management tools, whether at the macro level (Pluriannual Plan 2010-2013, Strategic Plan of the Mayor's Office of Rio de Janeiro 2009-2012), or at the micro level (Municipal Health Plan 2009-2012), point in the direction of a recharacterization of the old network of primary healthcare into a new model centered on Family Health, that broadens the scope of services offered to the population at this level of care[5,6].

The new Undersecretary now had access to budgetary resources, independent from an over-arching, general work plan, which also facilitated the budgetary decentralization for the ten Coordinating Committees of the Planning Areas that operate the primary care service network.

In 2008, according to SIOPS, the percentage of SMS-RJ's own resources used towards the cost of the hospital network of the municipality was in the order of 83%, comprising one of the greatest distortions in relation to health costs among the principal capitals of the country, as well as among the OECD countries that spend an average of 37.7% on this network[26]. In this period, the execution of the budget occurred practically in a single Work Plan, shared among different units. Without any restrictions in place, the speed of execution was the determining factor in defining which unit would utilize the resources first.

It should be mentioned, furthermore, that there was a new legal framework approved by the City Council in April of 2009, and subsequently regulated, that refers to the proposal for a new organizational model, with the support of the management of social health organizations[27,28]. This model allowed the reduction of purchasing times of permanent material and its consumption, as well as facilitating the contracting of professionals in the Family Health Teams by the CLT, thus eliminating the existing temporary jobs and the time allocated for the personnel selection process. Since the middle of the 1980s, the transformations generated by worldwide economic globalization propelled the formulation and implementation of Administrative Reforms, inspired by the "New Public Administration"[29]. In Brazil during the 1990s, this agenda generated the development of the Directive Plan for the Reform of the State Apparatus (PDRAE)[30]. In terms of the administrative dimension, PDRAE made use of three central points: construction of a more flexible organizational model or institutional pluralism – the model of social organizations; results-driven management, and new forms of accountability[31,32].

In 2010, with the development of the new PPA and with the new organizational flowchart in place it was possible to decentralize the resources among the different budgetary units directly so that the APs could implement them, increasing the capacity for planning and transparency in the utilization of the resource, restricting the ability of the media or of industry lobbyists to consume the resources intended for primary care.

Reform of the care model

The discussion in the literature on care models for many countries has already been surpassed, however in Brazil it is still a highly debated theme. In the majority of developed countries with universal public systems, the term "primary care" refers generally to the outpatient services of first contact[33].

Drawing on the theoretical groundwork of Starfield[7] adapted for the Brazilian context by Harzheim et al.[8] and Brasil[34], RCAPS was structured using *four essential attributes*: (i) access and provision of first-contact services, (ii) the assumption of longitudinal responsibility by the patient (continuity of the physician-patient relationship across life) independent of the absence or presence of illness, (iii) the guarantee of holistic care beginning with a consideration of the

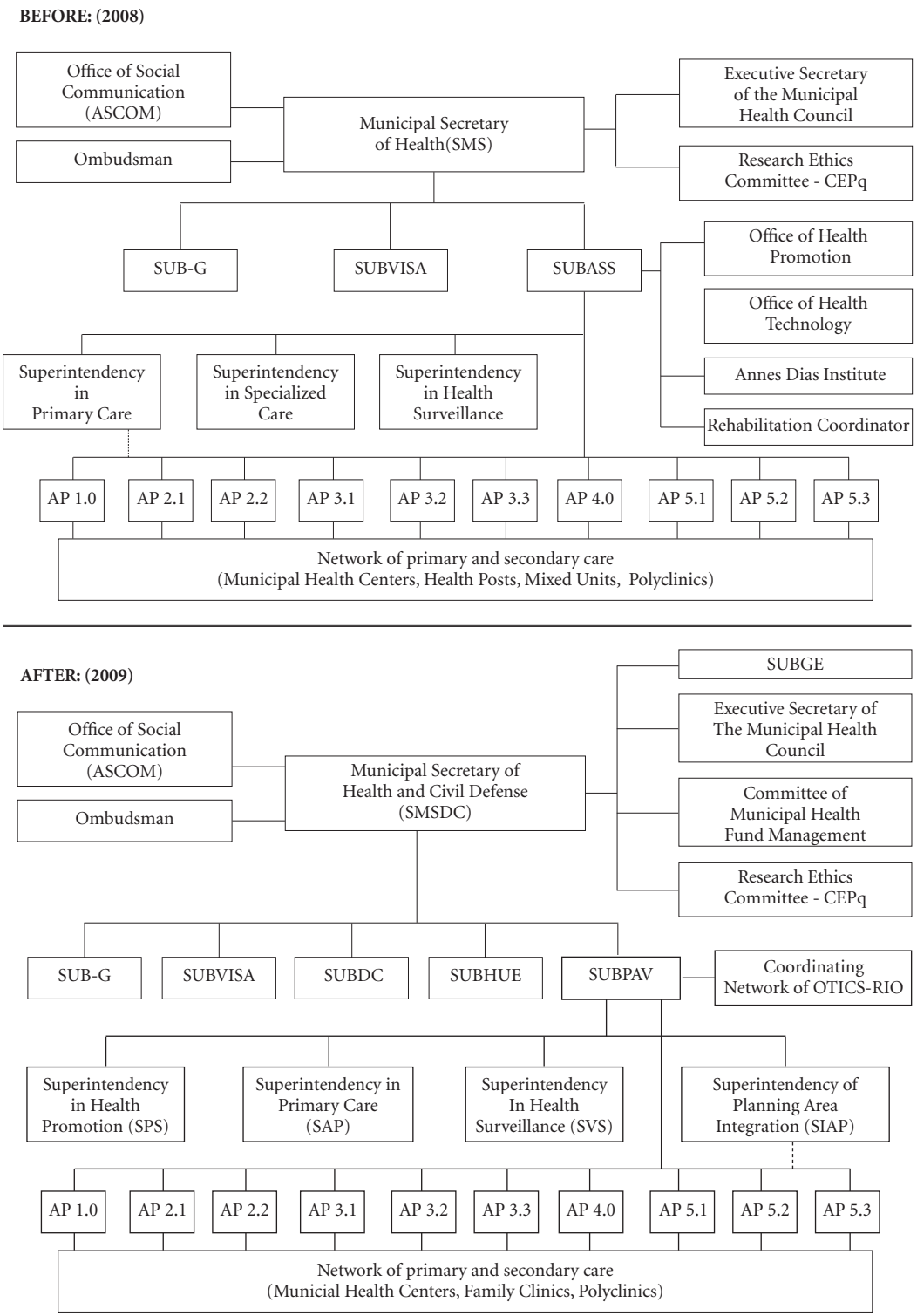

Figure 1. Organizational flowchart of the Municipal Health Secretary – 2008 vs 2009.

Source: Developed by the authors, based on the existing official structure of the Municipal Secretary of Health of Rio de Janeiro, July 2008 and January 2009.
Legend: SUB-G = Undersecretary of Management; SUBVISA = Undersecretary of Health Surveillance and Inspection and Control of Zoonoses; SUBDC – Undersecretary of Civil Defense; SUBHUE – Undersecretary of Hospital, Urgent, and Emergency Care; SUBPAV = Undersecretary of Health Promotion, Surveillance, and Primary Care.

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physical, mental, and social contexts of health within the limits of the activity of the health teams, and (iv) the coordination of different actions and necessary services to resolve less frequent and more complex needs. In addition to this, RCAPS also considered *three "derived" attributes*: (i) the family orientation, (ii) the community orientation, via epidemiological knowledge of a given locale, (iii) cultural competency, which refers to the relation between the health professionals with specific cultural characteristics.

Access

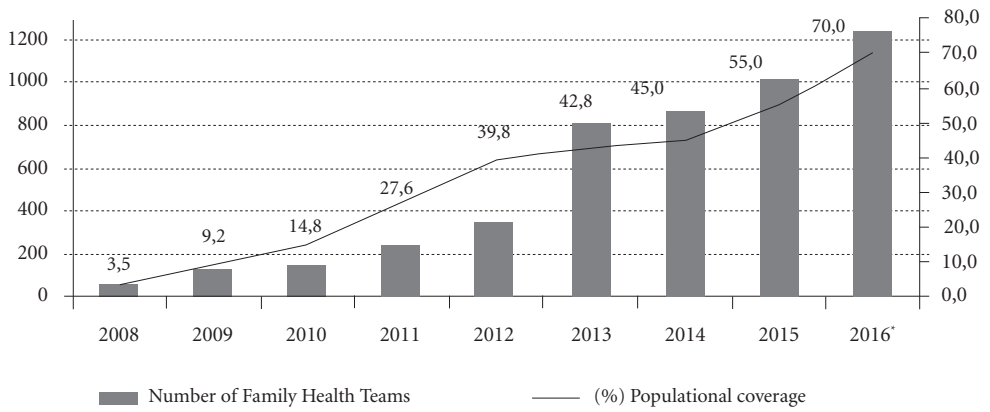
In December of 2008, only 68 of the 163 teams registered in the CNES had doctors during field visits carried out by SMS. If we consider that each Family Health Team (ESF) was responsible for an average of 3,450 people (standard value used at the time by the DAB/SAS/Ministry of Health), we will find a total of 234,600 users with family doctors in complete teams. By the end of December 2013, there were 813 ESF teams, or in other words, more than 2.5 million Rio residents came to have access to services and actions conducted by complete teams of Family Health (Graphic 1). By May of 2015, this total reached 860 ESF and 346 Teams of Dental Health (ESB). Included in this total are 732 new ESF and 285 ESB units, in the 76 Family Clinics founded between 2009[35,36] and the middle of 2015 (Table 1).

This expansion has been accompanied by an unprecedented increase in the number of ambulatory procedures; with an increase of 535.4% between 2009 and 2013 (monthly average grew from 21.054 to 133.77 procedures/exams).

Links and longitudinal care

During the 1970s, the city went through a strong territorialization of primary care services, having a health unit for each Administrative Region of the City. However, with the passage of time and until 2008, the link of each person to a health unit became nearly nonexistent, and the user could access any unit in the system without any differentiation among the levels of complexity. Primary care units did not have any flowchart of referrals or coordination of care for slightly more complex exams. The lack of coordination of care thus resulted in various distortions in the system. The unorganized migration of users in search of health services further aggravated the wait times for treatment. Highly specialized hospitals worked in a disorderly fashion, carrying out simple procedures, such as x-rays, to complex surgeries, without any coordination of care.

Beginning in 2011, electronic records were implemented. The management of the list of duplicated registries has progressively been allowing the verification of records in a more unified way, and this has resulted in greater access to the pop-



Graphic 1. Evolution of population coverage of complete Teams in Family Health and the number of expected teams. Rio de Janeiro 2008 – 2016*.

* Projection via the Strategic Planning of City Hall.
Source: DAB/SAS/Ministry of Health4 and IBGE, resident-population estimated by year.
Note: December was considered the reference month to represent population coverage (%) for each year.

Table 1. Distribution of the number of primary healthcare units by type of unit, family health teams, and oral health teams, according to time and year and implementation of the ESF – Municipality of Rio de Janeiro – 1999 to 2015.

Time to establish the ESF in the units (in complete years)	Year/period of establishment	Number of Family Health Clinics	Number of Municipal Health Centers (CMS – type A)	Number of Municipal Health Centers (CMS - type B)	Total units	Number of Family Health Teams	Number of Dental Health Teams
7 to 16 years	From 1999 a 2008	0	31	4	35	128	61
6	2009	3	2	0	5	25	12
5	2010	19	8	16	43	219	100
4	2011	32	17	19	68	295	110
3	2012	13	5	10	28	129	46
2	2013	3	0	2	5	20	8
1	2014	3	3	1	7	23	3
0	2015	3	0	0	3	21	6
Total	-	76	66	52	194	860	346

Source: Municipal Secretary of Health of the City of Rio de Janeiro, May of 2015, and CNES/MS.

ulation. In August of 2013, 13% of the records were duplicates, or rather, represented persons registered in more than one unit of primary care. With the intensive project of verification coordinated by the OTICS-Rio Network of Observatories of the Municipal Health Secretary[37], together with the community health agents throughout the second semester of 2013, by March of 2014 this percentage had fallen to less than 5%.

Guarantee of Holistic Care

Since 2010, all the primary care units have come to possess the standard model of services offered to the population, expressed in the "service portfolio of primary care." The monitoring of this service portfolio allows us to evaluate the performance of each of the units in Type A (that possess only the established Family Health Strategy) and the Type B (that have Family Health and the traditional model with other specialties).

Longitudinality of care

Indicators of pay for performance

All of the Family Health professionals and teams in each unit have extra financial incentives that allow for the earning of a 14th salary, in the event they reach well defined targets (resources known as "variable parts 2 and 3" in the management contract). One of the most important indicators that measures longitudinality of attention refers to the percentage of consultations with the patient's own family doctor. The desired target is 80 to 90% of the total consultations, as there are periods of medical inter-substitution during travel to conferences, internal or external meetings, or periods of vacation or time off. This means that there is no expectation that 100% of a user's consultations take place with the same family doctor.

Coordination of Care

Since August of 2012, family doctor responsible for each unit act in an innovative and decentralized way, in a regulatory function for other levels of the system. Through the Regulatory System of the Ministry of Health – called "SISREG" online – doctors are directly scheduling visits with other specialists and exams for diagnostic support in the entire network of close to 80 providers of municipal, state, federal and private services contracted by SUS. By 2015, more than 100 service providers were already in SISREG. Beginning with the period in which PHC assumed the oversight of the ambulatory component, the offer of consultations and exams more than doubled, rising from close to 36,000 in 2009 to 980,761 approved procedures in 2013, an increase of 2,634.34%.

"Law of inverse care"

Health services must be attentive and monitor that which has come to be called the "law of

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inverse care," in which those who need health care the most are those who benefit the least. Thus, the health programs achieve greater coverage in the demographic groups that need them least. In Rio de Janeiro, this monitoring is done in a way that prioritizes persons with the greatest social vulnerabilities, registered by the City Program "Carioca Family Card" that complements the resources of the federal "Bolsa Família" or Family Allowance program.

An important element in the reform of the care model is the incorporation of two Residency Programs, one in Family Medicine and the other in Family Health Nursing, whose development, evaluation, and certification are administered by the SMS itself. The speed of RCAPS expansion has not been accompanied by an expansion in openings at the universities that can support this type of strategy adopted since 2012.

Discussion

In the experience we are currently analyzing, the outcome follows what Giovanella et al.[38] argued in their study of Brazil, such as challenges in the consolidation of the Family Health Strategy. The choice of implementing a more comprehensive primary care, with local adaptations of the model, and expansion of the assistance and professional resources in the Family Health Units, is an option for the expansion of the model.

In their research, Mendonça et al.[39] point to the fact that one Brazilian capital – Florianópolis – demands a specialist certification in family and community health as an entrance requirement for doctors, via public tender. This may be a motivating factor for the doctors to have remained working in this area, and a facilitator for these professionals' adherence to the Family Health Strategy. Motivation and paid financial incentives for performance are meant to harmonize organizational objectives and the health professionals. In 2004, the government of the United Kingdom redefined their pay for performance system for the general practitioner with 136 indicators[40]. The authors concluded that between 1998 and 2007 there were significant improvements in aspects of clinical performance in relation to the group of indicators associated with chronic diseases, which represent the majority of diseases treated in the daily practice of the ESF units. On the other hand, some authors such as Gérvas et al.[41] alert us to the fact that when an income supplement is accepted as an agreed-upon motivation and incentive, there is a risk of opportunistic behavior. Rio's experience in PHC demonstrates that the indicators of performance evaluation should be based on quality clinical practice, logged by the use of *electronic records*. The effect of opportunistic behavior on the part of health professionals can be avoided through an overall policy to promote good work, award and support those that are doing well, incentivize those who can improve and introduce necessary corrections, and – most critically – *periodically reevaluating* the list of indicators that are taken into account for this extra incentive.

Conclusion and viewpoints

This article presents the principal standards and policies that guided and influenced the RCAPS reform in the city of Rio de Janeiro, allowing other evaluations of these results to verify their effective implementation, further considering the strategic themes outlined for the year 2016 – "Consolidation of the Reform and proud to be SUS: consolidation of the values of primary care reform, equity, and development."

The main challenges of the new organizational model pertain to the need for cultural change for a results-driven administrative model. The increase in work resulting from the new methods of monthly monitoring also pointed to the use of technological tools in real time. With the decentralization of budgetary resources for the planning areas, demands have been made on the administrators of each PA to keep track of the indicators of the management contracts, and to form and train local teams. The expansion of the Family Health Teams began to pressure the municipal administrator to construct new Family Clinics in areas not covered by the teams.

In relation to RCAPS, the expectation of City Hall[8] is one of continuing to increase access until 2016, a year in which they plan to reach more than 4.5 million Rio residents and close to 1,300 Family Health teams, which would mean close to 70% of the resident population of the city with Family Health Teams, and would consolidate the new care model under development.

In comparison with the other capital cities in the country, and with the previous situation of Rio itself, according to the Ministry of Health[28], between 2005 and 2012, 638 of the 1,644 new Family Health Teams created in Brazil were in Rio de Janeiro, representing 38.8% of the total. Therefore, this represents the redemption of a

historic social debt. For this great PHC expansion, since 2012 SMS-RJ has been developing the largest Residency Program in Family and Community Medicine whose R1 vacancies, added to those at UERJ and UFRJ, have in the first semester of 2015 already surpassed 130 openings. The program is expected to maintain the expansion of openings with the goal of progressively providing adequate training to all the family doctors and nurses that work in PHC. They have also been incentivizing the insertion of undergraduate students of Medicine in the Internship in Family Health Program, and the training of tutors via funding from the Professional Masters in Primary Care at ENSP/Fiocruz, which has already graduated its first cohort of 24 students in 2013 and a second in 2015.

The broadening of populational coverage of Rio residents with Family Health Teams via the RCAPS described here can be studied further, its effects and impact measured using the analysis of indicators of structure, process, and results, including the database of the National Systems of Health Information (collected at the municipal and sub-municipal level) and specific indicators on the access of electronic records established in 95% of the primary care units.

Another form of evaluation can be undertaken with the research instrument PCATool, validated for Brazil by Harzheim et al.[8] based on Starfield[7] – the theoretical foundation utilized by RCAPS. This instrument offers the triangulation of analysis, to the degree that the same questionnaire has "mirror-questions" for doctors, nurses, users, and managers/administrators, for glimpses into the evaluation of the care of children and adults. In 2014, UFRGS[42] and SMS-RJ developed the largest field research project with a statistical sample of close to 7,000 users with the PCATool instrument[43] to evaluate the quality of PHC.

There is also the possibility of stratification in the planning areas ("health districts"); in the end, the rhythm of the expansion of growth of the PHC network has been different in each PA. Furthermore, the percentage of ESF coverage in each unit or neighborhood can be defined as a dependent variable in a statistical model, in addition to the fact that the dummy variable of "neighborhood with 100% coverage versus neighborhoods with less than 100%" can be tested. Another approach would be the use of multivariate statistical analysis, in a model of multiple regression, testing socio-demographic and structural variables as independent variables.

Collaborations

D Soranz and LF Pinto contributed to the conceptualization, outlining, analysis and interpretation of data, editing and critical revision of the article. GO Penna participated in the editing and critical revision of the article.

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