

Primary Health Care quality in Rocinha – Rio de Janeiro, Brazil, from the perspective of children caregivers and adult users

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Abstract *This paper aims to evaluate the extent of PHC attributes, from the experience of users, both adults and children caregivers, comparing the area served by the health facilities of the district of Rocinha with other areas of health district 2.1 in the municipality of Rio de Janeiro. The measuring tool used to evaluate the quality of services provided was the Primary Care Assessment Tools. A cross-sectional study was conducted, with independent random samples and 802 interviewees. Results indicate a better performance for children care when compared to adult care. Attributes “access” and “comprehensiveness – available services” were the worst performers, probably due to the great external and internal migration existing within Rocinha itself. To improve these attributes, we recommend the adoption of a single list of residents by Family Health Team (ESF), with a maximum number of people, including territorial delimitation and people internal mobility. We also highlight the importance of strengthening the Family and Community Medicine Residency Program, which, since 2012, has been training specialists with the support of preceptors and enables increased portfolio of PHC services.*

Key words *Primary Health Care, Health services research, Primary Care assessment tool*

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Introduction

According to Starfield¹, Primary Health Care (PHC) can be defined as the first level of access of a health system (“first contact access”), characterized mainly by its essential attributes, which are longitudinality, comprehensive healthcare and coordination of care within the very health system. PHC services can also rely on complementary characteristics such as family and community orientation and cultural competence, which are its derivative attributes. In addition, countries with a greater focus on PHC (such as the United Kingdom, France, Spain, Portugal and Canada) have better health indicators with lower health investments compared to less oriented countries (such as the U.S.)².

In Brazil, the challenge of increased access² of large urban centers has been overcome since 2010, with successful examples of expansion to more than 50% of the resident population of some capitals such as Belo Horizonte, Florianópolis, Curitiba and, recently, Rio de Janeiro³. This challenge encompasses the implementation in the middle class. Macinko & Harris⁴ state that “the future of the Family Health Strategy (ESF), its sustainable expansion into urban centers and middle classes and its effective integration with secondary and tertiary care will require continued engagement with health service providers, ongoing funding and technical and intellectual investments – all ultimately relying on political support.” On the other hand, studies point to the heterogeneity of the quality of care provided by the ESF, which offers diversified portfolios of health services and actions to respond to the attribute of the sometimes insufficient comprehensiveness⁵⁻⁸. Some of these findings highlight better performance in mother and child health outcomes⁹⁻¹³, others point to reduced hospitalizations due to PHC-sensitive causes¹⁴⁻¹⁷, while others show a clinically insufficient performance.

As of 2009, the municipality of Rio de Janeiro implemented a Primary Health Care Reform (RCAPS)⁴ and progressively expanded access to its resident population, from 3.5% to about 60% coverage in late 2016. In absolute numbers, about four million people from Rio are monitored. It is the second largest city in Brazil in number of people covered by Family Health Teams. To assist in the escalation of teams and in the coordination of care, electronic records have been implemented in the facilities since 2011 and are now compatible with the national medical records, the e-SUS, which allows the calculation of sev-

eral clinical and management support indicators from the records of individual users. In addition, to support integration between PHC, surveillance and health promotion, other innovations in health information and communication technologies were developed by the municipality, among them the use of social media and blogs of the Family Health Teams, which provide greater transparency to the actions and services developed in the daily work of professionals¹⁸.

Access was improved with the construction of new health units and the refurbishment of old facilities, and the establishment, in 2012, of the Family and Community Medicine Residency Program of the very Municipal Health Secretariat¹⁹. This program was initially implanted in the district of Rocinha and has been helping the training of specialist doctors and providing greater resolution of health actions. In addition to being a pioneer in the implantation of medical residency, the Rocinha district was also one of the first places to achieve 100% coverage of Family Health Teams in the year 2010, and was chosen by authors for a comparative analysis with other areas of the South region of the city of Rio de Janeiro. As a result, the objective of this article is to evaluate the extent of PHC attributes, from the experience of users, both adults and children caregivers, comparing the territory served by the Rocinha health facilities with other areas of health district 2.1.

Methodology

This is a cross-sectional study with independent random samples of service users for each of the ten planning areas (AP) of the city of Rio de Janeiro. This paper delimited its analysis, considering only the sanitary district called “AP 2.1”, which corresponds to the southern region of the city, consisting of 18 districts and with a population of 638,050 inhabitants in 2010²⁰. One of these districts is the Rocinha (69,356 inhabitants), a set of subnormal clusters areas and census tracts²¹ also known as “Favela da Rocinha”. It is recognized as one of the biggest favelas in the world and its occupation dates back to the 1930s. After expressive expansion, including strong migrant movement from the Brazilian Northeast, it receives the first Health Facility in the 1980s, namely, CMS Dr. Albert Sabin.

In 2015, the Rocinha district had 25 family health teams (Figure 1), with a total of 63,454 inhabitants (November/2015) and an average of

2,538 residents per team (2,483 is the median). On the other hand, there were 28 teams in the other districts of AP 2.1, totaling 90,913 dwellers, with an average of 3,247 registered people per team (3,290 is the median).

Comparing the district of Rocinha and other districts, a minimum difference of 0.5 was accepted in the mean general score between the areas, and a significance level of 5% and a statistical power of 80% were used for children, and 90% for adult users. The complex sample structure was also incorporated into the sample calculation using the fit factor with an intraclass correlation coefficient (ICC) of 0.01. In AP 2.1, the total sample in 2014 was $n = 802$, of which 369 children and 433 adults. Children under 12 years of age were included and adults 18 years of age

and over were eligible to participate in the survey. In addition, the health facility should have existed for at least six months, and each user, at the time of the interview, should have performed at least one medical consultation prior to the date of application of the tool. Those with physical and mental conditions that prevented them from answering the questionnaire were excluded.

Following authorization of the municipal manager and AP coordination, previously trained interviewers contacted the facility's coordination and scheduled the visit. Individuals were invited to participate consecutively in the study at the health unit. All those who accepted signed an Informed Consent Form. Two questionnaires were applied: a) Primary Care Assessment Tool – PCAT-Brazil^{22,23}, a questionnaire that measures the level of health services' orientation to PHC (through seven previously defined attributes); and b) a structured questionnaire with sociodemographic variables and referred morbidity. Interviewers were duly trained with the use of an "Interviewer's Handbook". PCAT-Brazil allows the calculation of scores for each PHC attribute and a general score on a scale of 0 to 10. Scores above 6.6 indicate high quality health care in the respective item / attribute.

In relation to the statistical analysis, the mean scores of each attribute were calculated, in addition to the general and essential mean scores for Rocinha and other districts, following the criteria for calculation according to the tool's manual. To compare the strata "district of Rocinha" vs. "other districts of AP 2.1", the t-test was used for two independent samples, both for children users and adult users. In the analyzes that included the whole sample, whether child user or adult user, the structure of the sampling plan was considered, which allows to incorporate adjustments in variability estimates, considering 5% for the levels of statistical significance. The calculated estimates were shown by mean score and the respective 95% confidence interval.

The following software were used throughout the study: (i) the Teleform²⁴ program, version 10.5, for the design of the questionnaires, the reading of the questionnaire images and data validation; Data Analysis and Statistical Software (STATA), version 12²⁵; and the Statistical Analysis System (SAS), version 9.4²⁶, for collected database analysis, review, exploratory data analysis and statistical inference.

The study was approved by the Ethics Committee of the Municipal Health Secretariat of Rio de Janeiro (SMS-RJ) and followed the principles



Figure 1. Map of the Health Planning Areas of the City of Rio de Janeiro (with emphasis on AP 2.1) and map of the 25 Family Health Teams of the community of Rocinha – 2016.

Source: Own elaboration from the Statistical Journals and Maps of Primary Health Care (CEMAPS) of the city of Rio de Janeiro²⁷.

of CNS Resolution N° 466/2012. Interviews were carried out by handing out the letter of presentation of the study to users or caregivers, as well as reading and signing the Informed Consent Form (TCLE).

Results

Primary Care Assessment Tool

The mean time of each interview in the case of the child questionnaire was 28 minutes and 32 minutes in the case of adults. The main responsible for the child, who answered the tool was the father or mother (about 80% of the cases, with an average age of 30 years) and grandparent (in 6% of situations) (Table 1). Regarding gender and skin color, in Rocinha, most children were male and non-white, whereas in the other AP 2.1 districts, white boys prevailed. Among adults, women predominated (about 80%) in both groups. In the Rocinha district, half of the people were married or had a partner, with an average of three children and schooling of around five years of study. Among the other areas, 38.31% had a partner and about nine years of study.

Nurseries or schools were attended by only 49.69% of the children and a little over 50% had SUS card in the Rocinha community. As for the *Bolsa Família* (Family Grant) Federal Government Card and its equivalent of the municipality of Rio de Janeiro, the *Família Carioca* (“Rio de Janeiro Native Family”) card, 28.75% and 10.00%, respectively, benefited of these social programs. These data are corroborated when the employment issue was evaluated, in which information evidenced that only slightly more than 50% of those responsible for the children were employed or received Social Security benefits.

When asked about the choice of service, 30-36% stated that it had been defined by the Municipal Health Secretariat, which is in accordance with the form of registration proposed by the municipality, through territorialization, whether for a Municipal Health Center or a Family Health Clinic. From the data shown in Table 1, it is believed that, over the years, a link has been created between the facility and the people consulted, since most of them have reported using the establishment for over a year.

In addition, 20% of the children’s caregivers stated that they had health problems and 50-60% of adults in the areas surveyed monitor their health status at the facilities. Half of children’s

medical appointments are pre-scheduled, and for adults, level is 65.73%. The general evaluation of the last consultation is positive, with more than 80% declaring they were satisfied or very satisfied. Finally, when enquired on whether they had private health plan, fewer than 10% confirmed.

Table 2 shows the mean scores obtained from the attributes with a 95% confidence interval in the experience of adult and children users in AP 2.1 Primary Health Care services, comparing the district of Rocinha with the other areas of this health district. The essential and general scores were similar for children users and higher for adult users, when comparing Rocinha vs. the other districts at hand.

Among children, the only attribute with statistical significance (p-value < 0.10) was the “community orientation”, which is best evaluated among users of the Rocinha district. This same realm had similar results among adults. However, two other attributes – for adult users – access and longitudinality – obtained higher performance in this same district (p-values < 0.05). In this age group, the mean score obtained was 7.32 [CI: 6.88; 7.75] among the underlying items of “longitudinality”. This evidences a good quality of primary care in the follow-up of adults, especially among the most prevalent chronic diseases, namely, hypertension and diabetes.

On the other hand, attributes that contributed negatively (with scores below six) and must be improved were those related to access and coordination of care (children) and “access”, “comprehensiveness – services available”, “comprehensiveness – services provided” (adults). A careful review of the portfolio of services provided²⁷ in PHC by AP 2.1 (non-tabulated data) shows that there has been a delay in the implementation of various actions such as alcohol detoxification and intrauterine device insertion (IUD).

In relation to the attribute of longitudinality mentioned above, aggregate primary source indicators from electronic medical records allow us to infer improved quality health care since 2013. The proportion of consultations performed by the family doctor who monitors each family is an indicator of longitudinality of care, and the target was established as an interval [70%, 90%], since it is believed that periods of absence of the professional on vacation are necessary, his/her replacement by another colleague to participate of external events and congresses, as well as other possible interurrences. The positive trend of this indicator, when comparing two groups, namely, the district of Rocinha vs. the other AP 2.1 dis-

Table 1. Characterization of children and adult users of PHC services in the district of Rocinha and other AP 2.1 areas – Municipality of Rio de Janeiro – 2014.

Characteristics	Children users (n = 369)			Adult users (n = 433)		
	General	Rocinha district [n = 161]	Other AP 2.1 areas [n = 208]	General	Rocinha district [n = 184]	Other AP 2.1 areas [n = 249]
	n (%) / Mean (SSE)	n (%) / Mean (SSE)	n (%) / Mean (SSE)	n (%) / Mean (SSE)	n (%) / Mean (SSE)	n (%) / Mean (SSE)
Sociodemographic						
Gender						
Male	188 (50,95)	83 (51,55)	105 (50,48)	75 (17,32)	34 (18,48)	41 (16,47)
Female	181 (49,05)	78 (48,45)	103 (49,52)	358 (82,68)	150 (81,52)	208 (83,53)
Median age (interquartile interval)	2,99 (0,21) 2,00 (5,00)	2,66 (0,16) 1,00 (5,00)	3,24 (0,31) 2,00 (5,00)	47,53 (1,56) 48,00 (27,00)	45,27 (2,14) 45,50 (28,00)	49,20 (2,18) 50,00 (27,00)
Skin color						
White	150 (41,21)	78 (49,06)	72 (35,12)	119 (27,80)	48 (26,37)	71 (28,86)
Non-white (*)	214 (58,79)	81 (50,94)	133 (64,88)	309 (72,20)	134 (73,63)	175 (71,14)
Marital status						
Married /With companion/ Living together with someone	-	-	-	183 (42,96)	88 (49,44)	95 (38,31)
Single / Widow or Widower/ Separated / Divorced	-	-	-	243 (57,04)	90 (50,56)	153 (61,69)
With children						
No	-	-	-	87 (20,09)	32 (17,39)	55 (22,09)
Yes	-	-	-	346 (79,91)	152 (82,61)	194 (77,91)
How many children do you have?	-	-	-	2,67 (0,10)	2,85 (0,13)	2,53 (0,12)
How many years of study does the main responsible for children care / do you have?	9,09 (0,39)	8,37 (0,52)	9,67 (0,44)	7,34 (0,63)	5,48 (0,37)	8,60 (0,40)
Attends School / Nursery						
No	160 (43,48)	81 (50,31)	79 (38,16)	-	-	-
Yes	208 (56,52)	80 (49,69)	128 (61,84)	-	-	-
SUS Card Holder?						
No	172 (46,61)	77 (47,83)	95 (45,67)	96 (22,27)	49 (26,92)	47 (18,88)
Yes	197 (53,39)	84 (52,17)	113 (54,33)	335 (77,73)	133 (73,08)	202 (81,12)
Bolsa Família Card Holder?						
No	232 (63,22)	114 (71,25)	118 (57,00)	358 (83,64)	153 (84,07)	205 (83,33)
Yes	135 (36,78)	46 (28,75)	89 (43,00)	70 (16,36)	29 (15,93)	41 (16,67)
Família Carioca Card Holder?						
No	321 (87,47)	144 (90,00)	177 (85,51)	393 (92,04)	165 (90,66)	228 (93,06)
Yes	46 (12,53)	16 (10,00)	30 (14,49)	34 (7,96)	17 (9,34)	17 (6,94)
Occupation / Occupation of main responsible						
Working	189 (51,36)	86 (53,42)	103 (49,76)	201 (46,42)	87 (47,28)	114 (45,78)
Retired / Sickness benefit / Impaired	3 (0,82)	1 (0,62)	2 (0,96)	102 (23,56)	33 (17,93)	69 (27,71)
Not working, but seeking employment	78 (21,20)	27 (16,77)	51 (24,64)	53 (12,24)	26 (14,13)	27 (10,85)
Not working and not seeking employment	98 (26,63)	47 (29,19)	51 (24,64)	77 (17,78)	38 (20,65)	39 (15,66)

it continues

Table 1. continuation

Characteristics	Children users (n = 369)			Adult users (n = 433)		
	General	Rocinha district [n = 161]	Other AP 2.1 areas [n = 208]	General	Rocinha district [n = 184]	Other AP 2.1 areas [n = 249]
	n (%) / Mean (SSE)	n (%) / Mean (SSE)	n (%) / Mean (SSE)	n (%) / Mean (SSE)	n (%) / Mean (SSE)	n (%) / Mean (SSE)
Health Services						
The “health service” has been chosen or defined for you / the child						
You or some family member made the choice	246 (67,21)	94 (58,75)	152 (73,79)	262 (60,65)	91 (49,46)	171 (68,95)
It was defined for you	115 (31,42)	66 (41,25)	49 (23,79)	156 (36,11)	87 (47,28)	69 (27,82)
How long has user been consulting the service						
Less than 6 months	60 (16,71)	37 (23,72)	23 (11,33)	19 (4,46)	11 (6,11)	8 (3,25)
Six months to one year	64 (17,83)	23 (14,74)	41 (20,20)	40 (9,39)	17 (9,44)	23 (9,35)
Above one year	230 (64,07)	95 (60,90)	135 (66,50)	361 (84,74)	149 (82,78)	212 (86,18)
Don't know/ Don't remember	5 (1,39)	1 (0,64)	4 (1,97)	6 (1,41)	3 (1,67)	3 (1,22)
Specific health problem						
Yes	73 (19,89)	34 (21,25)	39 (18,84)	239 (55,32)	97 (53,01)	142 (57,03)
No	292 (79,56)	125 (78,13)	167 (80,68)	193 (44,68)	86 (46,99)	107 (42,97)
Don't know	2 (0,54)	1 (0,62)	1 (0,48)	0 (0,00)	0 (0,00)	0 (0,00)
Hospitalization in the last 12 months						
No	321 (87,95)	140 (87,50)	181 (88,19)	384 (89,30)	159 (87,85)	225 (90,36)
Yes	44 (12,05)	20 (12,50)	24 (11,71)	46 (10,70)	22 (12,15)	24 (9,64)
Type of last consultation						
Scheduled	191 (51,90)	74 (45,96)	117 (56,52)	282 (65,73)	110 (60,77)	172 (69,35)
Spontaneous	177 (48,10)	87 (54,04)	90 (43,48)	147 (34,27)	71 (39,23)	76 (30,65)
Do you have a private health plan?						
Yes	29 (8,17)	18 (11,54)	11 (5,53)	32 (7,75)	10 (5,65)	22 (9,32)
Health evaluation						
Last consultation general evaluation						
Very satisfied / satisfied	301 (82,24)	131 (81,37)	170 (82,93)	356 (82,79)	161 (87,50)	195 (79,27)
Mean	47 (12,84)	24 (14,91)	23 (11,22)	55 (12,79)	18 (9,78)	37 (15,04)
Not satisfied / Very unsatisfied	18 (4,92)	6 (3,72)	12 (5,85)	19 (4,42)	5 (2,72)	14 (5,69)
Do you have a health problem that has been ongoing for over a year?						
Yes	63 (17,07)	35 (16,80)	28 (17,40)	257 (59,35)	107 (58,15)	150 (60,24)

Source: Evaluation study on the level of primary health care orientation from the experience of users of the Family Clinics in the city of Rio de Janeiro.

Caption: (*) Non-white: “black”, “yellow”, “brown” and “indigenous” were gathered in one group. SSE – Sample Standard Error.

tricts, shows that, from 2015, the former’s performance exceeds the latter, and both remain within the lower limit of the target from the first quarter of 2015 (Graphic 1).

In AP 2.1, of the total number of people consulted by doctors, 83.4% answered the main reason for going to the health facility (whether

scheduled or spontaneous). Among responses, we highlight the reasons associated with routine follow-up and consultation, conducting examinations at the facility and, as a main complaint, hypertension, demonstrating consistency with the results found for access and longitudinality attributes (Figure 2).

Table 2. Mean scores (#) and confidence intervals (CI 95%) of Primary Health Care attributes in the experience of adult users and responsible for children. AP 2.1: Rocinha district vs. other districts – Municipality of Rio de Janeiro – 2014.

PHC attributes	CHILDREN						P-Value*
	General		Rocinha District		AP 2.1 Other districts		
	n	Mean (CI 95%)	n	Mean (CI 95%)	n	Mean (CI 95%)	
Affiliation	367	8,46 (8,03; 8,89)	161	8,39 (7,56; 9,21)	206	8,51 (8,14; 8,88)	0,765
Use	368	8,44 (8,00; 8,88)	161	8,76 (7,92; 9,61)	207	8,18 (7,80; 8,56)	0,190
Access	367	5,42 (5,02; 5,83)	161	5,46 (4,84; 6,08)	206	5,39 (4,86; 5,93)	0,858
Longitudinality	368	6,78 (6,25; 7,31)	161	7,06 (6,08; 8,03)	207	6,57 (6,02; 7,11)	0,355
Coordination of care	93	5,73 (4,76; 6,71)	41	6,07 (5,25; 6,88)	52	5,47 (3,84; 7,09)	0,485
Information System Coordination	353	7,34 (6,63; 8,04)	156	7,44 (6,03; 8,84)	197	7,26 (6,64; 7,88)	0,804
Comprehensiveness – Services available	342	6,15 (5,52; 6,78)	152	5,96 (4,72; 7,19)	190	6,30 (5,70; 6,90)	0,591
Comprehensiveness – Services provided	353	6,50 (5,85; 7,15)	154	6,01 (5,15; 6,87)	199	6,88 (6,12; 7,63)	0,123
Essential score	366	6,98 (6,60; 7,36)	160	7,00 (6,34; 7,66)	206	6,97 (6,53; 7,41)	0,929
Family orientation	362	6,21 (5,44; 6,98)	158	6,56 (5,56; 7,56)	204	5,94 (4,87; 7,01)	0,373
Community orientation	300	5,61 (4,89; 6,33)	117	6,19 (5,79; 6,58)	183	5,24 (4,29; 6,19)	0,067
General score	367	6,77 (6,35; 7,19)	160	6,89 (6,21; 7,58)	207	6,68 (6,16; 7,20)	0,595
PHC attributes	ADULTS						P-Value*
	General		Rocinha District		AP 2.1 Other districts		
	n	Mean (CI 95%)	n	Mean (CI 95%)	n	Mean (CI 95%)	
Affiliation	428	7,75 (7,03; 8,47)	183	8,01 (7,38; 8,64)	245	7,55 (6,43; 8,68)	0,445
Use	431	8,11 (7,70; 8,53)	184	8,39 (7,99; 8,78)	247	7,91 (7,31; 8,50)	0,165
Access	415	4,77 (4,29; 5,25)	175	5,35 (5,32; 5,39)	240	4,35 (3,90; 4,80)	< 0,001
Longitudinality	431	6,84 (6,33; 7,35)	184	7,32 (6,88; 7,75)	247	6,48 (5,88; 7,09)	0,033
Coordination of care	131	6,22 (5,58; 6,85)	46	5,68 (4,82; 6,54)	85	6,51 (5,95; 7,07)	0,104
Information System Coordination	410	7,38 (6,84; 7,92)	174	7,75 (7,00; 8,49)	236	7,11 (6,43; 7,79)	0,193
Comprehensiveness – Services available	366	5,05 (4,37; 5,73)	153	4,92 (3,40; 6,44)	213	5,14 (4,70; 5,59)	0,766
Comprehensiveness – Services provided	400	4,56 (4,28; 4,83)	171	4,64 (4,54; 4,74)	229	4,49 (4,04; 4,95)	0,497
Essential score	426	6,38 (6,04; 6,72)	182	6,63 (6,38; 6,88)	244	6,20 (5,73; 6,67)	0,102
Family orientation	424	5,77 (5,15; 6,39)	182	5,98 (5,17; 6,78)	242	5,62 (4,75; 6,48)	0,516
Community orientation	350	5,15 (4,57; 5,72)	149	5,74 (5,37; 6,11)	201	4,70 (4,08; 5,32)	0,009
General score	427	6,20 (5,83; 6,56)	182	6,47 (6,13; 6,81)	245	5,99 (5,51; 6,47)	0,100

Source: Evaluation study on the level of primary health care orientation from the experience of users of the Family Clinics in the city of Rio de Janeiro.

Scores range from 0 to 10. CI: confidence interval. * Associated with t-test for two independent samples¹⁰.

Discussion

Among children, the overall mean score obtained (6.77), higher than 6.60 recommended by PCA-Tool-Brazil as a cutoff point for defining good

health care (even within the confidence interval), suggests that health district 2.1 has been able to develop quality PHC for this age group. While mean coverage of this area is 24.2% (91.5% in Rocinha and 16.0% in other districts), data sug-

gest that local level management has developed actions and strategies to strengthen the 53 teams. Results were higher than those observed in the western region of São Paulo, Vitória da Conquista/BA and Montes Claros/MG²⁹⁻³¹. With regard to adults, the general mean score obtained (6.20) is in a good health care path, higher than to several national locations that applied the same methodology, such as the Alfenas/MG³² micro-region and the municipality of Porto Alegre³³.

The fact that Rocinha achieved better performance in several attributes, besides the greater PHC population coverage can be explained by the consolidation of the Family and Community Medicine Medical Residency Program of the SMS-RJ in place in two (Maria do Socorro Silva e Souza Family Clinic and Albert Sabin Municipal Health Center) of the three facilities since 2012 and, as of 2016, also at the Rinaldo Delamare Family Clinic. The first graduation of resident

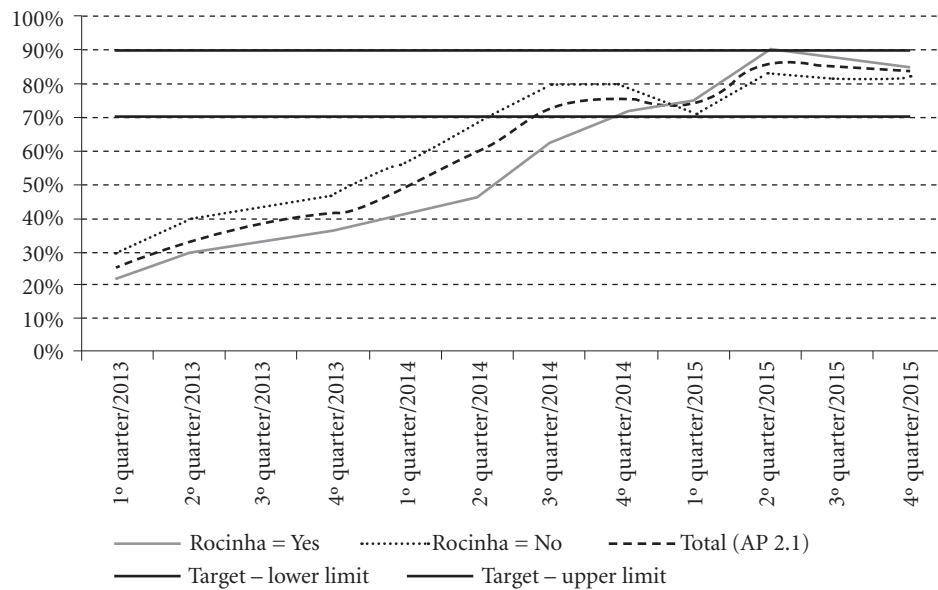


Chart 1. Proportion of patients' medical consultations by own family doctor Rocinha x other AP 2.1 districts - Municipality of Rio de Janeiro, 2013-2015.

Source: PHC Electronic Medical Record, AP 2.1/SUBPAV/SMS-RJ.



Figure 2. Reason for last medical consultation among adult users.

doctors of the program was in 2014 and consolidated in Rocinha in 2015, and was, in 2016, the first choice among first-year residents (R1). We can speculate that the implantation of the residency program may be associated with increased patients medical consultations by the own family doctor, which from 2013, thus one year after the onset of the residency program, exceeded the stipulated target and exceeded the indicator when compared to other districts.

According to Streit³⁴, one factor that has hampered users' access in the Rocinha community is the location in border areas of each of the facilities, exactly when families move to other "neighborhoods of the Rocinha". Aragão³⁵ argues that this community is an important place of internal mobility, which is the synthesis of the metropolis' spatial mobility. Therefore, a solution for cases where a neighborhood has already achieved close to 100% of its resident population would be the combination of territory / micro-areas with lists of users by doctor, such as those used in European countries³⁶. Thus, geographic accessibility would be facilitated, eliminating barriers to primary care, given the difficulty of getting children and elderly people to walk up alleyways and steep stairs of the Rocinha.

The overall score was 6.77 (children) and 6.20 (adults, p -value = 0.010). The best performance among children is related to the greater tradition of physicians of the municipal health network in mother and child health^{37,38}, as a set of actions and activities has been geared to this group since the 1970s and 1980s. Furthermore, there are several performance-related payment indicators at the SMS³⁹, which may be contributing to the targeting of PHC services. Future studies should be developed to compare these indicators and the distribution of physicians by specialty of practice, considering that less than 20% of professionals have a Family and Community Medicine specialist title.

Final considerations and recommendations

We recommend the strengthening of the Family and Community Medicine Residency Program within a political-pedagogical project that enhances the full development of the SMS service portfolio through contents and PHC-relevant clinical practices. In parallel, the in-service training of preceptors and the participation of experienced faculty in the SUS are also another desirable action to qualify undergraduate and graduate students and ensure academic sustainability and motivation for the search for updated knowledge in PHC services. Another recommendation is the adoption of a list of patients by doctor to facilitate access and longitudinality, especially in urban environments with high geographic mobility.

Another suggested action would be the systematic use of PCAT-Brazil in a reduced version (with fewer items) for the evaluation of the quality of services provided to adult users and children, as one of the indicators of the management agreement. Its implementation would allow the semiannual monitoring of actions and activities underlying each PHC structure and process attribute, in addition to allowing comparison with other national and international regions.

The challenges of developing quality PHC in districts like Rocinha are constant. It suffices to highlight its resident population of 70,000 inhabitants, greater than 92% of Brazilian municipalities, and without taking into account the great internal mobility among families who move to live with relatives in the neighborhood each year, which further increases the floating population that uses public services. Thus, the management of a list of registered and monitored patients is another recommended aspect for a good development of local health activities.

Collaborations

LF Pinto, P Travassos, R Pessanha elaborated the structure and the calculations of scores for the analysis of data. OP D'Avila carried out the survey of the bibliographical references and the critical reading of the paper. L Hauser, E Harzheim, MR Gonçalves performed the critical review of the final version of the paper.

References

1. Starfield B. *Primary care: concept, evaluation and policy*. New York: Oxford University Press; 1992.
2. Escorel S, Giovanella L, Mendonça MH, Magalhães R, Senna MCM, organizadores. *Saúde da Família: avaliação da implementação em dez grandes centros urbanos: síntese dos principais resultados*. 2ª ed. Brasília: Editora do Ministério da Saúde; 2005.
3. Soranz D, Pinto LF, Oliveira GO. Eixos e a reforma dos cuidados em Atenção Primária em Saúde (RCAPS) na cidade do Rio de Janeiro, Brasil. *Cien Saude Colet* 2016; 21(5):1327-1338.
4. Macinko J, Harris MJ. Brazil's Family Health Strategy — Delivering Community-Based Primary Care in a Universal Health System. *N Engl J Med* 2015; 372(23):2177-2181.
5. Facchini LA, Piccini RX, Tomasi E, Thumé E, Silveira DS, Siqueira FV, Rodrigues MA. Performance of the PSF in the Brazilian South and Northeast: institutional and epidemiological Assessment of Primary Health Care. *Cien Saude Colet* 2006; 11(3):669-681.
6. Oliveira MMC. *Presença e extensão dos atributos da atenção primária entre os serviços de atenção primária em Porto Alegre: uma análise agregada* [dissertação]. Porto Alegre: Universidade Federal do Rio Grande do Sul; 2007.
7. Giovanella L, Moraes SME, Mendonça MHM. *Estudos de Caso sobre Implementação da Estratégia Saúde da Família em Grandes Centros Urbanos*. Rio de Janeiro: Ed. Fiocruz; 2009.
8. Chomatas ER, Vigo A, Harzheim. Avaliação da presença e extensão dos atributos da atenção primária na rede básica de saúde no município de Curitiba, no ano de 2008 [dissertação]. Porto Alegre: Universidade Federal do Rio Grande do Sul; 2010.
9. Macinko J, Guanais FC, Fátima M, Souza M. Evaluation of the impact of the Family Health Program on infant mortality in Brazil, 1990-2002. *J Epidemiol Community Health* 2006; 60(1):13-19.
10. Bezerra Filho JG, Kerr LR, Miná DL, Barreto ML. Spatial distribution of the infant mortality rate and its principal determinants in the State of Ceará, Brazil, 2000-2002. *Cad Saude Publica* 2007; 23(5):1173-1185.
11. Macinko J, Marinho de Souza MF, Guanais FC, Silva Simões CC. Going to scale with community-based primary care: an analysis of the family health program and infant mortality in Brazil, 1999-2004. *Soc Sci Med* 2007; 65(10):2070-2080.
12. Piccini RX, Facchini LA, Tomasi E, Thumé E, Silveira DS, Siqueira FV, Rodrigues MA, Paniz VV, Teixeira VA. Effectiveness of antenatal and well-baby care in primary health services from Brazilian South and Northeast regions. *Rev Bras Saude Mater Infant* 2007; 7(1):75-82.
13. Aquino R, Oliveira NFDE, Barreto ML. Impact of the Family Health Program on Infant Mortality in Brazilian Municipalities. *Am J Public Health* 2009; 99(1):87-93.
14. Alfradique ME, Bonolo PF, Dourado I, Lima-Costa MF, Macinko J, Mendonça CS, Oliveira VB, Sampaio LFR, De Simoni C, Turci MA. Internações por condições sensíveis à atenção primária: a construção da lista brasileira como ferramenta para medir o desempenho do sistema de saúde (Projeto ICSAP – Brasil). *Cad Saude Publica* 2009; 25(6):1337-1349.

15. Macinko J, Dourado I, Aquino R, Bonolo P de F, Lima-Costa MF, Medina MG, Mota E, de Oliveira VB, Turci MA. Major Expansion Of Primary Care In Brazil Linked To Decline In Unnecessary Hospitalization. *Health Affairs* 2010; 29(12):2149-2160
16. Lentsck MH, Latorre MRDO, Mathias TAF. Trends in hospitalization due to cardiovascular conditions sensitive to primary health care. *Rev. bras. epidemiol.* 2015; 18(2):372-384.
17. Dias-da-Costa JS, Büttgenbender DC, Hoefel AL, Souza LL. Hospitalizações por condições sensíveis à atenção primária nos municípios em gestão plena do sistema no Estado do Rio Grande do Sul, Brasil. *Cad Saude Publica* 2010; 26(2):358-364.
18. Pinto LF, Rocha CMF. Inovações na Atenção Primária em Saúde: o uso de ferramentas de tecnologia de comunicação e informação para apoio à gestão local. *Cien Saude Colet* 2016; 21(5):1433-1448.
19. Justino ALA, Oliver LL, De Melo TAP. Implantação da Residência em Medicina de Família e Comunidade da Secretaria Municipal do Rio de Janeiro. *Cien Saude Colet* 2016; 21(5):1471-1480.
20. Instituto Brasileiro de Geografia e Estatística (IBGE). *Censo Demográfico de 2010, Documentação dos microdados da amostra*. Rio de Janeiro: IBGE; 2012.
21. Instituto Brasileiro de Geografia e Estatística (IBGE). Sinopse por Setores. Censo Demográfico de 2010. [acessado 2016 mar 20]. Disponível em: <http://www.censo2010.ibge.gov.br/sinopseporsetores/?nivel=st>
22. Rio de Janeiro. Prefeitura da Cidade do Rio de Janeiro, Secretaria Municipal de Saúde. Cadernos de Estatísticas e Mapas da Atenção Primária em Saúde do Município do Rio de Janeiro (CEMAPS). Contribuições para a construção de uma linha de base para os cadastros das microáreas da estratégia de Saúde da Família do município do Rio de Janeiro. Rede de Estações-Observatório das Tecnologias de Informação e Comunicação em Serviços de Saúde. Rio de Janeiro/RJ, Secretaria Municipal de Saúde, 2013. 10v. [acessado 2016 maio 15]. Disponível em: <http://www.redeoticsrio.org/cemapsrio2014.html>
23. Brasil. Ministério da Saúde (MS). Secretaria de Atenção em Saúde. Departamento de Atenção Básica. *Manual do instrumento de avaliação da atenção primária à saúde: primary care assessment tool pcatool*. Brasília: MS; 2010.
24. Harzheim E, Starfield B, Rajmil L, Álvarez-Dardet C, Stein AT. Consistência interna e confiabilidade da versão em português do Instrumento de Avaliação da Atenção Primária (PCATool-Brasil) para serviços de saúde infantil. *Cad Saude Publica* 2006; 22(8):1649-1659.
25. TELEFORM (Autonomy, na HP Company, Vista, Estados Unidos), version 10.5, 2010.
26. STATA (Stata Corp., College Station, Estados Unidos), version 12, 2011.
27. SAS (SAS Inst., Cary, Estados Unidos), version 9.4, 2013.
28. Rio de Janeiro. *Guia de Referência Rápida. Carteira de Serviços: Relação de Serviços prestados na Atenção Primária à Saúde*. Rio de Janeiro: Secretaria Municipal de Saúde e Defesa Civil; 2011. (Série F. Comunicação e Educação em Saúde).
29. Ferrer APS. *Avaliação da atenção primária à saúde prestada a crianças e adolescentes na região oeste do município de São Paulo* [tese]. São Paulo: Universidade de São Paulo; 2013.
30. Braz JC. *Avaliação da atenção às crianças menores de um ano na Estratégia Saúde da Família em um município da Bahia, sob a ótica dos cuidadores* [dissertação]. Ribeirão Preto: Escola de Enfermagem de Ribeirão Preto; 2012.
31. Leão CDA. *Avaliação dos atributos da atenção primária: um enfoque sobre a saúde infantil na estratégia saúde da família em Montes Claros - Minas Gerais* [dissertação]. Montes Claros: Universidade Estadual de Montes Claros; 2010.
32. Albino da Silva S. *Avaliação dos atributos da atenção primária à saúde na estratégia saúde da família em municípios do sul de Minas Gerais* [tese]. São Paulo: Universidade de São Paulo; 2014.
33. Oliveira MMC. *Presença e extensão dos atributos da atenção primária entre os serviços de atenção primária em Porto Alegre: uma análise agregada* [dissertação]. Porto Alegre: Universidade Federal do Rio Grande do Sul; 2007.
34. Streit MB. *Atenção primária em saúde e mobilidade populacional na favela da Rocinha, Rio de Janeiro* [dissertação]. Rio de Janeiro: Fiocruz; 2014.
35. Aragão L. Rocinha: síntese da mobilidade espacial na metrópole. In: Ferreira AP, organizador. *A experiência de migrante: entre deslocamentos e reconstruções*. Rio de Janeiro: Garamound; 2010. p. 429-450.
36. Giovanella L. A atenção primária à saúde nos países da União Européia: configurações e reformas organizacionais na década de 1990. *Cad Saude Publica* 2006; 22(5):951-963.
37. Brasil. Ministério da Saúde (MS). *Política de saúde materno-infantil*. Brasília: MS; 1977.
38. Brasil. Ministério da Saúde (MS). *Assistência integral à saúde da mulher: bases de ação programática*. Brasília: MS; 1984. Série B: Textos Básicos de Saúde (6).
39. Rio de Janeiro. Secretaria Municipal de Saúde. Contratos de Gestão. Secretaria Municipal de Saúde, Prefeitura da Cidade do Rio de Janeiro, 2015. [acessado 2016 mar 2]. Disponível em: <http://www.rio.rj.gov.br/dlstatic/10112/2761838/4144585/CG0192014VivaRio-CAP2.1eUPARocinha.pdf>

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