

Evaluating the implementation of residency in family and community medicine in primary care

Avaliando a implementação da residência em medicina de família e comunidade na atenção primária

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ABSTRACT

Introduction: Family and community medicine (FCM) is the preferred specialty to be found in primary health care (PHC). The best form of training professionals for the specialty is medical residency, when at least 70% of the internship period is spent at this local. Thus, it is necessary evaluate the insertion quality of the residency in the PHC.

Objectives: This study aimed to evaluate the quality of implementation of medical residency programs in FCM in PHC.

Method: Use of a tool developed to analyze the implementation of FCM residency in PHC in small (up to two second-year residents), medium (two to five) and large (from six) programs, evaluating from zero to four points, from unimplemented to fully implemented. The grades were based on interviews with residents, preceptors, coordinators, and municipal managers, considering the fourth-generation assessment with Bardin's analysis of the speeches.

Results: Six programs were evaluated, in municipalities with 20,000 to 12 million inhabitants, ranging from one to 22 second-year residents per program, ranging from unsatisfactory (one program) to fully implemented (two programs). Municipalities with greater PHC coverage showed better implementation results. The lowest scores were in the items "permanent education" and "continuing education" and the highest in the presence of FCM specialists as preceptors. There is a difference in perception between the interviewees considering the same questions. The study suggests that municipalities with greater investment in PHC also have better residency programs, regardless of whether they are linked to educational centers or health secretariats. The SARS-CoV-2 pandemic has also hindered health education. The results were also defined when different people were interviewed, demonstrating that the fourth-generation analysis is essential.

Conclusion: It is necessary to observe the implementation of residency programs in PHC to ensure quality training, and not just quantity to provide care.

Keywords: Family Practice; Primary Health Care; Internship and Residency; Education, Medical; Health Services assessment.

RESUMO

Introdução: A medicina de família e comunidade (MFC) é a especialidade preferencial para estar presente na atenção primária à saúde (APS). O padrão ouro de formação de profissionais para a especialidade é a residência médica, momento que ao menos 70% do período de estágio é na APS. Assim, é imprescindível avaliar a qualidade de inserção da residência nesse local.

Objetivo: Este estudo teve como objetivo avaliar a qualidade de implementação dos programas de residência médica em MFC na APS.

Método: Utilizou-se uma ferramenta desenvolvida para a análise de implementação de residência de MFC na APS em programas pequenos (até dois residentes do segundo ano), médios (de dois a cinco) e grandes (a partir de seis), avaliando de zero a quatro pontos, entre não implantado e totalmente implantado. As notas foram obtidas a partir de entrevista com residentes, preceptores, coordenadores e gestores municipais, considerando a avaliação de quarta geração com análise de Bardin das falas.

Resultado: Seis programas foram avaliados, em municípios de 20 mil a 12 milhões de habitantes, com variação de um a 22 residentes do segundo ano por programa, desde insatisfatório (um programa) a totalmente implantado (dois programas). Municípios com maior cobertura de APS apresentaram resultados de implementação melhores. As notas mais baixas foram nos itens "educação permanente" e "educação continuada", e as mais altas na presença de especialistas em MFC como preceptores. Há diferença de percepção entre os entrevistados considerando as mesmas perguntas. O estudo sugere que municípios com maior investimento na APS também possuem melhores programas de residência, independentemente de o vínculo ser com centros educacionais ou secretarias de saúde. A pandemia de Sars-CoV-2 também dificultou a educação em saúde. Os resultados também foram definidores quando entrevistadas diferentes pessoas, demonstrando ser essencial a análise de quarta geração.

Conclusão: Há a necessidade de observar a implementação dos programas de residência na APS para garantir formação de qualidade, e não apenas quantidade para provimento.

Palavras-chave: Medicina de Família e Comunidade; Atenção Primária à Saúde; Internato e Residência; Educação Médica; Avaliação de Serviços.

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INTRODUCTION

Medical residency is considered the best strategy for the training of specialists, occurring in the in-service training model¹. The demand for medical residency programs in family and community medicine (MRP-FCM) has increased due to the health system's need to add specialists to Primary Health Care (PHC)². Even with the increasing number of openings, the number of specialists is still insufficient, as each doctor is responsible for up to 4,000 people²⁻⁴, encouraging an increase in federal investments in the last decade by more than 10 times^{5,6}.

The MRP-FCM main training area is PHC and family health units⁷. This characteristic in training is essential to obtain the expected competencies, and the presence of competent preceptors to work in this area is desirable². However, the current legislation allows preceptors from other areas to work in MRP-FCM, unlike other specialties^{7,8}.

Even though there are guiding documents related to the organization of MRP-FCM by the National Medical Residency Commission (CNRM, *Comissão Nacional de Residência Médica*) and the Brazilian Society of Family and Community Medicine (SBMFC, *Sociedade Brasileira de Medicina de Família e Comunidade*)⁹⁻¹¹, there are no tools to assess the minimum conditions of the physical structure, adequate educational supplies and processes to guarantee the training of new professionals in PHC in an objective manner.

It is necessary to evaluate MRP-FCM in PHC based on a standard¹² and the teaching and care services in PHC, such as the MRP-FCM, require evaluation instruments that consider the uniqueness of the activities carried out there, which currently

does not exist. Thus, this article presents the application of an instrument that evaluates the implementation of MRP-FCM for PHC in six programs in the state of São Paulo.

METHOD

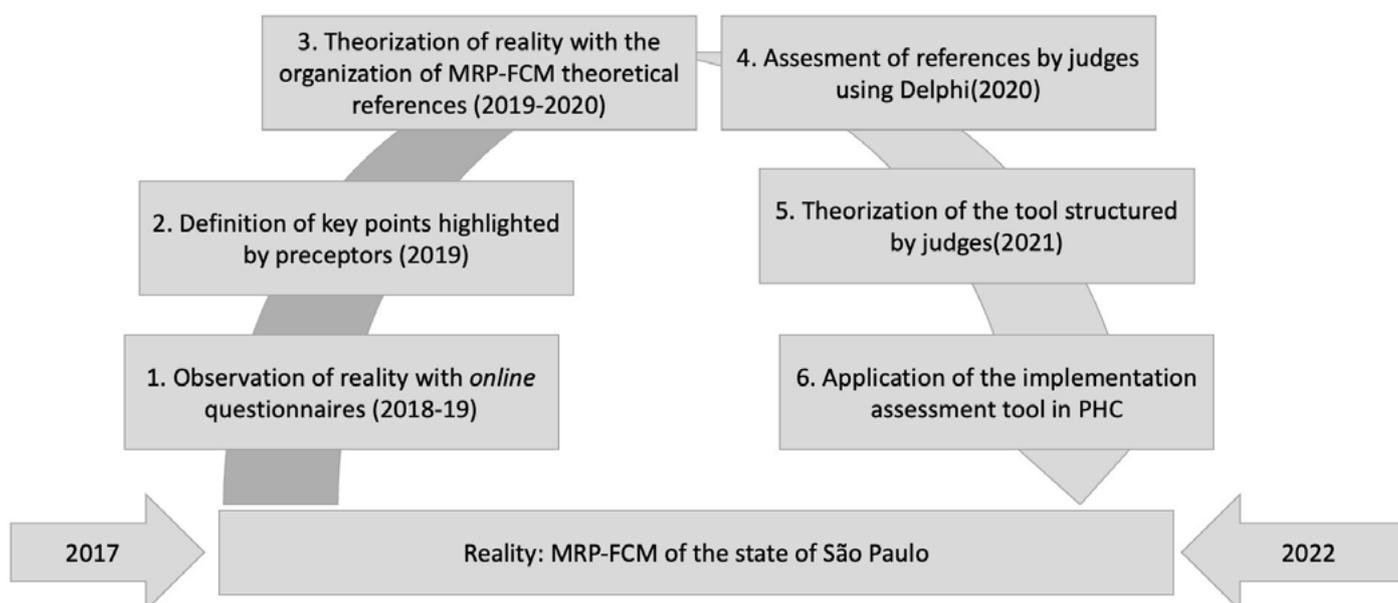
To compare the actual implementation with the ideal one, it was necessary to develop the evaluation instrument (Figure 1). Steps 1 to 5 represent the development of the instrument and are available in specific articles^{6,13}. Step 6 is the application of the instrument, which corresponds to this article.

The instrument was organized into three dimensions: organization of the unit, human resources and preceptor-student ratio. Each dimension was divided into items, scored from zero to four based on the degree of implementation of the item in the MRP-FCM against the predetermined verification sources: 0 – not implemented ($\leq 20\%$); 1 – unsatisfactory (between $> 20\%$ and $\leq 40\%$); 2 – intermediate (between $> 40\%$ and $\leq 60\%$); 3 – satisfactory ($> 60\%$ and $\leq 80\%$); 4 – full (above 80%), the same cut-off used in similar studies¹⁴.

Thus, the average of each MRP-FCM or each researched item was considered as: not implemented: ≤ 0.8 points; unsatisfactory: **0.8-1.5 points**; intermediate: **1.6-2.3 points**; satisfactory: **2.4-3.2 points**; full: ≥ 3.2 points.

A semi-structured interview was carried out and subsequently, content analysis of the responses was performed. The respondents were the second-year resident, the preceptor, the program coordinator or supervisor and the municipal manager. The answers and objective data from the program were analyzed (area assigned to the team with resident),

Figure 1. Arc by Ribeiro et al.



Source: Created by the authors.

accounting for 12 assessed items (Table 1 and Chart 1).

The objective of scoring from four different members aimed to use a fourth generation assessment¹⁵. This tool aims to change the service that is being evaluated based on the results and not just issue a judgment of value, as it occurs in the first generation evaluation, for instance, promoting high-quality evaluation and monitoring.

When there was a divergence of answers between the interviewees, the most incisive answer among the 4 characters was used, which was usually the most negative one.

The interviews were carried out in programs of the state of São Paulo that had second-year residents in 2021. The total sample could be 34 MRP-FCM, with at least one second-year resident (11 programs with up to two second-year residents, 12 programs with three to five residents and 11 programs with six or more second-year residents)¹⁶.

The inclusion criterion for the interviews was that the MRP-FCM must have at least one second-year resident, with the exclusion criterion being the absence of an interview with one of the participants for the analysis. The interviews were carried out

Table 1. Analysis of the implementation of Medical Residency Programs in Family and Community Medicine (MRP-FCM) evaluated in 2021.

Dimension	Subdimension	Assessed item	Up to 2 R2		2 to 5 R2		From 6 R2 onwards		Mean per group	Verification Source
			MRP1	MRP2	MRP3	MRP4	MRP5	MRP6		
<i>A (Unit organization)</i>										
A1	Physical space	Medical offices	4	1	3	3	3	4	3	At least office per professional and/or no need for rotations during resident care moments
		Procedure rooms	3	1	4	2	1	3	2.4	Rooms to carry out training procedures for the specialty
A2	Unit schedule	Resident schedule	4	1	2	1	2	4	2.4	The resident has a protected schedule for attending and discussing cases; in addition, there are spaces for home visits, procedures, community groups
		Population size	4	4	1	1	4	3	2.8	The population is considered to be of sufficient size for continued care and aspects of vulnerability are considered in the panel (Ordinance N. 3147, of December 28, 2012)
A3	Management-residency ratio		2	1	2	2	1	3	2	Management supports the organization of the unit so that adequate training is obtained
<i>B (human resources)</i>										
B1	Preceptor is FCM		4	3	2	4	4	4	3.5	Preceptor with title or residency
B2	Complementary training	Permanent education taking place at the Family Health Unit	2	1	0	0	1	3	1.2	Permanent education in the health unit
		Continuing education / Clearance for training outside the health unit	4	2	2	0	3	4	2.5	Authorization by the municipal/residency management for preceptors to participate in training activities
B3	Theory about FCM		4	4	2	3	4	4	3.5	Presentation on the specialty in theory and practical experience
B4	Financial support (grant)		4	1	3	1	4	4	2.9	Financial support for the preceptor

Continua...

Tabela 1. Continuação.

Dimension	Subdimension	Assessed item	Up to 2 R2		2 to 5 R2		From 6 R2 onwards		Mean per group	Verification Source
			MRP1	MRP2	MRP3	MRP4	MRP5	MRP6		
<i>C (preceptor-resident ratio)</i>										
C1	3 residents/ preceptor		4	4	3	0	3	4	3	Maximum of 3 residents per preceptor 40 hours/week
C2	5 students/ preceptor		4	4	3	0	0	2	2.2	Maximum of 5 students (residents and undergraduate students) per preceptor 40 hours/week
Final mean (0-4)			3.6	2.3	2.3	1.4	2.5	3.5	Mean grades = 2.6	

Note: not implemented ($\leq 20\%$) (≤ 0.8 points); unsatisfactory (between $> 20\%$ and $\leq 40\%$) ($0.8 - 1.5$ points); intermediate (between $> 40\%$ and $\leq 60\%$) ($1.6 - 2.3$ points); satisfactory ($> 60\%$ and $\leq 80\%$) ($2.4 - 3.2$ points); full (above 80%) (≥ 3.2 points). R2: second year FCM resident.

Abbreviations: R2: 2nd-year resident; MRP 1-6: Medical Residency Program

Source: Created by the authors (2022).

Chart 1. Implementation analysis: analysis of interviews with second-year residents, preceptors, coordinators and municipal managers in 2021 (Groups A, B and C) of 6 Medical Residency Programs in Family and Community Medicine (MRP-FCM).

Dimension	Subdimension 1	Subdimension 2	Strengths (highest grades)	Weaknesses (lowest grades)	Divergence between statements (if any)
<i>A (unit organization)</i>					
A1	Physical space	Medical offices	MRP1 and MRP6: construction of school units that accommodate residents and students (grade 4).	MRP2: Insufficient number of rooms to accommodate all attending physicians plus the resident (grade 1).	MRP2: resident: there is a lack of one room – six office rooms to be distributed among seven people, with one always without access (not experienced in the residency due to the absence of a professional with schedule – COVID room schedule). Municipal management: there is an office rotation, and it is not possible to guarantee the office for 100% of the required time.
		Procedures	MRP3: activities developed at secondary level (with a greater number of materials and procedures) and matrix support of specialist professionals in Primary Health Care (PHC) to expand actions in the unit (grade 4).	MRP2: cytology – nursing only, collection. MRP5: It is not agreed that primary care performs procedures, except IUDs and ear washes. Lack of material to perform small procedures in PHC, purchased with funds from the preceptor (when the preceptor wishes to do so) (grade 1).	

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Chart 1. Continuation.

Dimension	Subdimension 1	Subdimension 2	Strengths (highest grades)	Weaknesses (lowest grades)	Divergence between statements (if any)
<i>A (unit organization)</i>					
A2	Unit schedule	Resident's schedule	MRP1 and MRP6: preceptors present 40 hours, and always available (even if the undergraduate students are present at the same time – preceptor's schedule) (grade 4).	MRP2: CLT (Consolidation of Brazilian Labor Laws) contract for 15 hours, sharing the team with the preceptor (mandatory target of 20 hours of consultations, home visits, etc.). To achieve this goal, the optional internship outside the unit was suspended. Discussion of cases via WhatsApp, as the preceptor has a simultaneous schedule, with a common schedule of 20 hours/week. Meeting schedule is protected (grade 1).	MRP2: management's perception that the resident has 35 hours to reach the goal of 20 hours, making it feasible to see and discuss cases, regardless of the organization and the preceptor's simultaneous schedule. Consultations scheduled every 15 minutes, and rarely meets the preceptor during the week (resident). There have already been discussions with management regarding the residency to "do the job" versus learning (residency preceptor/supervisor).
		Population size	MRP1: maximum 3,000 (grade 4). MRP2 and MRP 5: 3,000-3,500 (grade 4).	MRP4: second-year residents stay alone in rural units. The two preceptors are hired for 20 hours/week for two units and all the residents. Case discussion 1 hour per week. The schedule of visits and meetings depends on the care demand and "directions from the health secretariat" (grade 1).	MRP3: 5,000-7,500 (grade 1). MRP 4: 3,500 (takes over team) to 5,000 (grade 1).
A3	Management-residency ratio		MRP6: management does not interfere with the unit's schedule or volume of care, even if the resident receives a scholarship. Perception of support and joint construction. Difficulty in structuring human resources in the units (temporary) and exchanging information between the health secretariat and the university (grade 3).	MRP2: see resident's schedule. Guidelines and organizations by the municipal management (grade 1). MRP5: problems between the residency and the health unit management, mainly due to political appointments by non-technical people. Sudden changes to schedules without agreement. The increase in resident numbers in the last year has disorganized the structure of the MRP-FCM in the municipality (perception of the resident, preceptor and supervisor). The manager believes that the increase in resident numbers has made the environment less harmonious, making it more difficult to control all units with more residents (grade 1).	MRP2: The program supervisor's perception was that the management listened to demands but did not change due to the difficulties caused by the pandemic. The resident's response was emphatic: no help was given in two years.

Continue...

Chart 1. Continuation.

Dimension	Subdimension 1	Subdimension 2	Strengths (highest grades)	Weaknesses (lowest grades)	Divergence between statements (if any)
<i>B (human resources)</i>					
B1	Preceptor is resident or has a degree in FCM		MRP5: mandatory hiring of preceptors with title/residency in FCM plus mandatory training in a preceptorship course (grade 4).	MRP3: residency training in traditional basic units with a clinician, obstetrician-gynecologist and pediatrician, maintaining configuration to date, but with the presence of FCM specialists present in the unit (mainly with adult clinical work) (grade 2).	
B2	Complementary training	Permanent education taking place at the Family Health Unit (FHU)	MRP6: After the meeting with the team, there is a discussion of topics relevant to the unit (generally chosen by the team, but also chosen by the resident/preceptor), but with a decrease during the COVID-19 pandemic (grade 3).	MRP3: pressure from the municipal secretariat for assistance to the detriment of team training (grade 0). MRP4: presence of continuing education verticalized by the health secretariat, via remote learning, but with low access and difficulty in organizing the network (grade 0).	
		Continuing education / Release for activities	MRP1 and MRP6: release of the preceptor upon agreement and prior notice to the Municipal Health Secretariat, considered as the right of the worker/professional (grade 4).	MRP4: presence of continuing education verticalized by the health secretariat, via remote learning, but with low access and difficulty in organizing the network. Ordinance during the pandemic preventing the release of professionals for courses (grade 0).	
B3	Theory about FCM		General: classes in the first year on the FCM specialty and work in family health units with FCM specialists (grade 4). MRP6: assessment of the curriculum in the residency exam to verify whether the residency candidate knows the specialty (grade 4).	MRP3: presented in the first week of activity, but all activity takes place in basic health units with a standardized model (clinician, obstetrician-gynecologist and pediatrician in family health units) (grade 2). MRP4: matrix support of gynecologists and pediatricians for the MRP-FCM, with no counterpart in the volume of care for these professionals (grade 3).	

Continua...

Chart 1. Continuação.

Dimension	Subdimension 1	Subdimension 2	Strengths (highest grades)	Weaknesses (lowest grades)	Divergence between statements (if any)
<i>B (human resources)</i>					
B4	Financial support (grant)		General: payment of a grant in addition to the salary to work as a preceptor, by carrying out the activities: theoretical classes, practical classes, number of residents under their supervision, among others (grade 4).	MRP2: no financial support to be a preceptor at the unit, but receives payment for classes held at MRP-FCM (grade 1). MRP4: preceptorship grant type of contract, without receiving a salary to be a preceptor and/or doctor at the unit (grade 1). MRP5: variable subsidy according to the number of residents (1-5) and number of classes offered at MRP (grade 4).	
<i>C (preceptor-resident ratio)</i>					
C1	Three residents per preceptor (first and second year)		MRP3 and MRP5: variation of two to four residents per preceptor, most preceptors with a maximum of three residents (grade 3).	MRP4: two preceptors for 14 residents (grade 0).	
C2	Five students per preceptor (resident and undergraduate students)		MRP1: maximum of three students for the two preceptors, plus the four residents, with students attending the preceptor's schedule (grade 4). MRP2: the residency preceptor does not work with the undergraduate students, by contractual definition with the university (grade 4).	MRP4: Even without undergraduate students together with the residency, the average is seven students (residents + undergraduate students) per preceptor (grade 0). MRP5: there is an excessive number of medical courses that use the network as an internship field every year, increasing the number of students under the preceptor's supervision, who shares the preceptorship of students with second-year residents (grade 0).	MRP6: It is common for the university to include undergraduate students in PHC without consulting the municipal secretariat about the possibility of using the unit, precisely because the residency preceptor is a medical undergraduate teacher in the same unit (grade 4).

Abbreviations: R2: 2nd-year Resident; MRP 1-6: Medical Residency Program. Source: created by the authors (2022).

by videoconference, recorded, and the audio was transcribed in full for subsequent content analysis according to Bardin¹⁷. They were suspended when six programs met the inclusion and exclusion criteria. The six programs were distributed equally into three groups: up to two second-year residents; three to five residents; and six or more second-year residents. This division was arbitrarily carried out by the authors.

The study was approved by the Ethics Committee of Ribeirão Preto Medical School University of São Paulo under CAAE Opinion number 30805420.5.0000.5440.

RESULTS

In total, 40 participants from 13 programs were interviewed, and the analysis comprised 22 people from six programs (the coordinators of two programs also work as preceptors). The remaining MRP-FCM did not meet the inclusion criteria and met the exclusion criteria.

Table 2 shows the results of the implementation analysis and Table 3 shows the historical and demographic characteristics of the analyzed MRP-FCM, achieving the objective of MRP-FCM with demographic and institutional similarities within

Table 2. Historical and demographic profile of MRP-FCM analyzed in 2021.

Employment link	MRP1	MRP2	MRP3	MRP4	MRP5	MRP6
	Health Secretariat	Academic	Health Secretariat	Academic	Health Secretariat	Academic
Population of the municipality	33,598	12,396,372 ¹	695,328	737,310	336,454	240,542
Number of family health teams (FHT)	7	1498	40	44	102	31
Number of primary care teams	2	0	2	74	0	10
PHC coverage in the municipality in December 2021	75%	40%	22%	44%	88%	63%
Start of the program	2019	2016	2014	2020	2012	2012
First-year residents in 2021	2	0	3	4	30	6
Second-year residents in 2021	2	1	7	10	22	6
Accredited vacancies (R1+R2) in 2021 (% occupancy)	4 (100%)	4 (25%)	20 (50%)	48 (29%)	60 (86%)	6 (100%)
Family health units with residents	2	1	3	5	16	8
Estimated population of teams with residency	3,000	3,500	5,000-7,500	2,500-5,000 ²	3,000-3,500	3,500-4,000

¹ City of São Paulo: 12,396,372 / Social Organization is responsible for approximately 600,000 and the Family Health Unit where the resident works has six teams, with 21,000 people in the territory (number considered as "population" in order to compare with other MRP-FCM).

² 2,500 comprise three rural teams; the two urban units comprise four teams of 18 and 20,000 people.

Source: Prepared by the authors (2022).

the groups. It is important to highlight that the six programs evaluated are public ones, and the structural organization may be different in supplementary health services. Table 1 shows the content analysis of the interviews.

The average grade for all programs is 2.6, an implementation result considered satisfactory (Table 2). Two programs were **fully** implemented, with 3.6 and 3.5 points, MRP1 with four residents (two in the first and two in the second year, in a small municipality and started in 2019). The second, MRP6, has 12 residents (six from each year), being a medium-sized municipality, with 10 years of program, without distinction between academic professional and those linked to the health secretariat, as both links are present.

One program has a **satisfactory average (2.5)**, MRP5, which has also been operational for 10 years and is the largest program evaluated, with 30 residents in the first year and 22 in the second and linked to the health secretariat.

Two programs (MRP2 and MRP3) were considered to have **intermediate implementation (both 2.3)**, with the profile of the programs varying in size and time of existence and type of link. Finally, a program with **unsatisfactory implementation (1.4)**, with academic link. Coincidentally, the three programs are those with the lowest family health strategy coverage rates.

When looking at the average of the items, only two are implemented: preceptors with degrees in FCM (residency or title) and the theoretical presentation about the specialty to residents in a structured way, both with 3.5. The resident's

agenda in the unit and the residency correlation with municipal management had averages of 2.2 and 1.9 respectively, demonstrating that this item is intermediate. The only insufficient item is the continuing education present in the family health unit where the resident is working. The other items had a satisfactory average.

Bardin's analysis allowed the creation of grades for each item, justifying them, with the extremes of the statements (maximum positive and negative grades) being shown in Table 1, in addition to the divergence of statements between the interviewees.

DISCUSSION

This article demonstrated the use of an instrument to evaluate the implementation of MRP-FCM in PHC⁶ based on the perception of four people using fourth-generation evaluation¹⁵. The perception of different characters resulted in greater reliability in the analysis of the implementation of the MRP-FCM, mainly in MRP2 and MRP4, in which the divergence defined the final grades.

This study is unprecedented in analyzing the link and implementation of residency programs in PHC. In Brazil, the National Medical Residency Commission (CNRM, *Comissão Nacional de Residência Médica*) assesses the program's relevance in being started or maintained, without presenting inspection data publicly and without a specific tool for the PHC scenario^{18,19}. However, in recent years there has been an

increase in MRP-FCM in the country, without discussing the quality of the programs²⁰⁻²³.

The implementation results (Table 1) associated with the characteristics of the municipality and the MRP-FCM (Table 2) suggest that municipalities with PHC coverage above 50% also show the best results, regardless of their link (health secretariat or academic), and even being above the average for the state of São Paulo²⁴.

MRP1 and MRP6 were the only ones fully implemented considering the application of the evaluation instrument and with coverage above 60% of PHC. MRP5 had a satisfactory result. Despite the higher coverage rate, it has the largest number of residents at the same time among the evaluated MRP-FCM.

The two programs that showed intermediate grades have coverage below 50%. Finally, there was one program scored as unsatisfactory, with 1.4 points, with several areas requiring interventions, despite a coverage of 40%, similar to MRP2.

When observing the results in addition to the data presented above, in which municipalities with greater investments in PHC apparently have better implementation of MRP-FCM, suggesting a correlation between the municipality's appreciation of the government's policy, the data obtained can also be analyzed in the three dimensions of the instrument: organization of the unit, human resources and preceptor-resident ratio.

The "unit organization" dimension had the lowest grades in procedures (2.4), resident schedule (2.4) and correlation between the MRP and municipal management (2), the first two with a satisfactory average and the third with an intermediate one. The resident's schedule depends on the balance of care volume *versus* teaching time and organization, protected spaces for other activities, in addition to office consultations (home visits, team meetings, groups, procedures, among others).

The procedures depend on the flow of materials to the PHC (for example, surgical instruments) and/or outpatient clinics for the resident. Finally, in the correlation between MRP-FCM and management, collaboration and intercorrelation are essential, as the residency is linked to the municipal PHC, and this correlation has already been defined by federal documents and other studies^{9,25-27}.

The data suggest that it is necessary to create better development plans and adequate insertion of MRP-FCM in PHC, considering them as responsible for care goals, organization of the schedule and organization of material flows⁴ - Chart 1. Apparently, the more the management understands and supports the MRP-FCM and the organization of PHC as a Family Health Strategy, the greater the implementation results. Among the 6 evaluated programs, the "unit organization" dimension

received the highest scores in MRP1 and MRP6 and they are the fully implemented ones.

The organization of the unit is essential for the MRP-FCM, as there are expected domains dependent on the organizational structure of the unit and the health care network^{9,11}. Events as presented in MRP5, in which the preceptor purchases instruments to carry out procedures in PHC, or the non-existence of anatomopathological flows in the municipality are limitations in the training of a specialist in Family and Community Medicine.

In addition to surgical and procedural skills, an essential skill since undergraduate school, which is the collection of oncotic cytology, was not performed during either of the two years of residency at MRP2 due to the organization of the unit, representing a serious flaw in the resident's training.

The "human resources" dimension showed the worst averages in the items permanent education (1.2) and continuing education (2.5 points). Permanent education (PE) has been a structuring policy in the training of PHC workers since 2007^{28,29}, and the low grade apparently was the result of the SARS-CoV-2 virus pandemic, which coexisted with the data collection period (Chart 1).

To adapt to the new reality, MRP4 changed in-person activities to virtual meetings or recorded classes, while MRP3 suspended activities in order to increase assistance. These changes could be justified by the pandemic, but they decharacterized the unit's educational activity, as predicted by previous policies^{28,29}.

PE is service-based, with discussions being defined by the team and not by just a few professionals^{28,29}. Specifically the centrality in defining topics reduced the MRP6 grade from 4 to 3. Despite being able to carry out activities in health units, at pre-determined periods of the week, the use of topics chosen by a few does not characterize the team's awareness and modification proposed in PE.

In the same MRP6, management is also aware that units have a protected agenda for PE, but do not use the moment to do so. It is interesting to note that the person responsible for the education department was the one who made the observation. Thus, there is the knowledge and the limitation at the central level and difficulty in mobilizing these teams.

As for continuing education (CE), it was considered as activities provided by the Municipal Health Secretariat and/or release of professionals for courses and events, characterizing a training process outside the work environment^{28,29}. In general, MRP-FCM and municipal governments did not demonstrate any negative actions or resistance to this training, even structuring modules in a virtual environment (MRP4).

Despite the production of virtual courses, MRP4 had difficulty in organizing and releasing professionals during the SARS-CoV-2 pandemic period (Chart 1). Just as it happened with PE, this training modality was also affected by the pandemic, and required the rearrangement of PHC, as it occurred in other epidemic and pandemic moments in Brazil³⁰.

New studies will be necessary to evaluate what the educational process is like outside of atypical moments. It is important to highlight that PE and CE are two essential tools for managing and reorganizing work processes, being used during the pandemic for this purpose, as shown in specific literature³¹, but none of the 22 interviewees reported using them as work organizers. This fact may have occurred because the collection took place in 2021, post-reorganization, or because it was not actually used, but rather a verticalized management with guidelines for all units, without space for dialogue.

The grade for the payment item was satisfactory (2.9). It is the result of municipal policies or the MRP-FCM themselves that sought to financially value preceptors, as there was no national guideline until 2021 on the financial assistance of the role, a result similar to that of Brazil²⁷.

It is important to highlight that this financial assistance was linked to functions that the preceptor should perform in addition to the interviewees' work in the unit. The correlation of financial assistance based on other responsibilities is considered something positive, as the financial gain is seen as payment for performance³³. Only MRP5 associates the value to the number of residents and not the preceptorship work as a whole.

In two items of the "human resources" dimension, half of the evaluated MRP (2, 3 and 4) did not obtain maximum grades in the items: training in FCM and presentation of the FCM specialty. It is a small sample of programs evaluated, but half of the sample has difficulties in the theoretical and practical presentation of the specialty.

In a more in-depth analysis, although the three programs have family and community doctors in shoulder-to-shoulder training, the period is shorter than the time the resident stays in the unit. In MRP2, the resident is hired to work for 15 hours per week as an attending physician (Chart 1 – field A2, weaknesses). This workload corresponds to 42% of the resident's time in the unit (35 hours per week), the justification being the "additional grant for the resident".

In MRP3 and MRP4, the preceptors are hired for a period that varies from 15 to 30 hours per week. If the preceptor position in the Family and Community Medicine area is vacant, other professionals supervise them, either as doctors hired at the unit or through matrix support (Chart 1).

These are negative aspects and decharacterize medical residency as in-service training under supervision

in the area². Thus, the quality of the training of the future specialist may be compromised, due to the limited time under supervision with a specialist, the use of other areas with a large workload and residents with employment contracts at the same time as the internship.

The preceptor-resident ratio dimension was not implemented in MRP4, as the 14 residents are assisted by two preceptors working 20 hours each. Thus, there are 14 people in training assisted by 40 hours of preceptorship per week. Even MRP5 has an adequate organization and distribution according to the literature and rubric used^{19,34}.

The number of preceptors can directly influence the "number of students". With the implementation of the National Curricular Guidelines for Medicine, 30% of the internship workload must be carried out in two scenarios: PHC and urgency and emergency³⁵. As a result, more than 60% of the municipalities have undergraduate students and residents at the same time²⁷.

Of the six programs, four include undergraduate students. The increase in the number of students may displace the preceptor from residency to the undergraduate course (MRP6) or the residents take over supervision of the students (MRP5). Resident training in preceptorship is an expected skill¹¹ but it maintains the need for resident supervision. In MRP5, the preceptor is overworked and the resident assists in discussing cases with the undergraduate students without supervision.

Thus, the presence of undergraduate students will be a common occurrence in PHC based on the adequacy of the pedagogical projects of the medical course and this factor should facilitate the unit reorganization, optimizing the work and not disorganizing it³⁶. Inadequate PHC training can interfere with the choice of specialty and even in curricula with many PHC undergraduate activities, the "organization" of the disciplines corroborates professional choices^{13,37,38}.

The managers of MRP5 and MRP6 (Chart 1) report the excess of undergraduate students and the difficulty in interacting with the courses as a matter of concern. The inclusion of undergraduate students from health courses is a reality for PHC, but new studies will be necessary to understand how the MRP-FCM are organized and how they support them, but it is known to be positive³⁸. It is important to highlight that the Organizational Contract for Public Education-Health Action (COAPES, *Contrato Organizativo de Ação Pública de Ensino-Saúde*) is an instrument to assist in the organization of health services to support undergraduate courses and residency, organizing the training needs and available supply³⁹.

The limitations of the study were the limited number of evaluated MRP-FCM, one in the capital only, and the absence of a MRP in FCM with up to two or more than six

second-year residents in municipalities with more than 400,000 inhabitants.

Evaluating a MRP-FCM beyond what is expected by the CNRM is a challenge, as there is no national literature available on the subject, requiring the development of instruments for this purpose. This article aims to present the results of applying a tool that investigates the implementation of programs in PHC. To provide an adequate basis for the quality of the MRP-FCM, it will be necessary to develop and use other tools to achieve the possibility of program accreditation in the future.

FINAL CONSIDERATIONS

The opening of MRP-FCM aimed to increase the number of PHC specialists without checking quality. This article presents the application of an instrument to assess whether MRP-FCM are implemented in PHC and which points require improvement.

The instrument was applied to six programs in the state of São Paulo, demonstrating a variability of responses and quality of programs in their implementation. It is possible to expand its use to validate the tool, being a powerful FCM qualification structure in the future based on MRP-FCM.

AUTHORS' CONTRIBUTION

Lucas Gaspar Ribeiro: participated in the entire preparation of the article, from project conception, data collection, analysis of results such as dissertation, thesis and article and preparation of the material presented here. Eliana Goldfabr Cyrino: participated in the project conception, data collection, data analysis in the dissertation, organization and discussion of the results and preparation of the material presented here. Antônio Pazin Filho: participated in the project conception, data collection, data analysis in the dissertation, organization and discussion of the results and preparation of the material presented here.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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REFERENCES

1. Brasil. Lei nº 6.932, de 7 de julho de 1981. Dispõe sobre as atividades do médico residente e dá outras providências. Brasília: Presidência da República; 1981. p. 5.
2. Ribeiro LG, Villardi ML, Cyrino EG. Preceptor em residência médica em medicina de família e comunidade: compreendendo a singularidade desse profissional. In: Teixeira CP, Guilam MCR, Machado M de FAS, Gomes MQ, Almeida PF de, organizadores. Atenção, educação e gestão: produções da Rede ProfSaúde. Porto Alegre: Rede Unida; 2020. p. 253-68.
3. Scheffer M, Guilloux AGA, Miotto BA, Almeida C de J, Guerra A, Cassenote A, et al. Demografia médica no Brasil 2023. São Paulo: FMUSP, AMB; 2023. v. 1, 344 p.
4. Brasil. Portaria nº 2.436, de 21 de setembro de 2017. Aprova a Política Nacional de Atenção Básica, estabelecendo a revisão de diretrizes para a organização da Atenção Básica, no âmbito do Sistema Único de Saúde (SUS). Brasília: Ministério da Saúde; 2017. p. 1-35.
5. Brasil. Portaria nº 2.979, de 12 de novembro de 2019. Institui o Programa Previne Brasil, que estabelece novo modelo de financiamento de custeio da Atenção Primária à Saúde no âmbito do Sistema Único de Saúde, por meio da alteração da Portaria de Consolidação nº 6. Brasília: Ministério da Saúde; 2019. p. 7.
6. Ribeiro LG, Cyrino EG, Pazin-Filho A. Aprimorando a qualidade de Programas de Residência em Medicina de Família e Comunidade. Rev. Saúde Pública. 2023; 57:65.
7. Brasil. Resolução nº 1, de 25 de maio de 2015. Regulamenta os requisitos mínimos dos programas de residência médica em Medicina Geral de Família e Comunidade – R1 e R2 e dá outras providências. Brasília: Presidência da República; 2015. p. 7.
8. Brasil. Resolução nº 2, de 3 de julho de 2013. Diário Oficial da União; 2013.
9. Brasil. Matriz de competências em medicina de família e comunidade. Brasília: Ministério da Educação; 2019.
10. Barban Morelli Rosas J, Lopes Junior A, Moreira JV, Pellizzaro Dias Afonso M, Sarno MM, Borret RH do ES, et al. Recomendações para a qualidade dos programas de residência de medicina de família e comunidade no Brasil. Rev Bras Med Fam Comunidade. 2020;15(42):2509.
11. Sociedade Brasileira de Medicina de Família e Comunidade. Currículo baseado em competências para a medicina de família e comunidade. Rio de Janeiro: SBMFC; 2015.
12. Ander-Egg MJA e E. Avaliação de serviços e programas sociais. Petrópolis: Vozes; 1995.
13. Ribeiro LG, Cyrino EG, Villardi ML, Pazin-Filho A. FOFA da residência em medicina de família e comunidade no estado de São Paulo. Rev. Bras. Educ. med. 2024; 48(2) : e032.
14. Oliveira DC. Análise de implantação do componente hospitalar da Rede de Urgências e Emergências – RUE [dissertação]. Ribeirão Preto: Universidade de São Paulo, Faculdade de Medicina de Ribeirão Preto; 2017.
15. Guba EG, Lincoln YS. Avaliação de quarta geração. Campinas: Editora Unicamp; 2011. 320 p.
16. Brasil. Lei nº 12.527, de 18 de novembro de 2011. Regula o acesso a informações previsto no inciso XXXIII do art. 5º, no inciso II do § 3º do art. 37 e no § 2º do art. 216 da Constituição Federal; altera a Lei nº 8.112, de 11 de dezembro de 1990; revoga a Lei nº 11.111, de 5 de maio de 2005, e dispositivos da Lei nº 8.159, de 8 de janeiro de 1991; e dá outras providências. Brasília; 2011.
17. Bardin L. Análise de conteúdo. São Paulo: Edições 70; 2011. 280 p.
18. Brasil. Resolução CNRM nº 02, de 7 de julho de 2005. Dispõe sobre a estrutura, organização e funcionamento da Comissão Nacional de Residência Médica. Brasília; 2005.
19. Brasil. Resolução Comissão Nacional de Residência Médica nº 02 /2006, de 17 de maio de 2006. Dispõe sobre requisitos mínimos dos Programas de Residência Médica e dá outras providências. Diário Oficial da União; 2006. Seção I, p. 23-36.
20. Berger CB, Dalleggrave D, Castro Filho ED de, Pekelman R. A formação na modalidade residência médica: contribuições para a qualificação e provimento médico no Brasil. Rev Bras Med Fam Comunidade. 2017;12(39):1-10.
21. Chaves HL, Borges LB, Guimarães DC, Cavalcanti LP de G. Vagas para residência médica no Brasil: onde estão e o que é avaliado. Rev Bras Educ Med. 2013;37(4):557-65.
22. Rodrigues RD, Campos CEA, Anderson MIP. Formação e qualificação do médico de família e comunidade através de programas de residência médica no Brasil, hoje: considerações, princípios e estratégias. Rio de Janeiro: Sociedade Brasileira de Medicina de Família e Comunidade; 2005. 28 p.

23. Petta HL. Formação de médicos especialistas no SUS: descrição e análise da implementação do Programa Nacional de Apoio à Formação de Médicos Especialistas em Áreas Estratégicas (Pro-Residência). Rio de Janeiro: Escola Nacional de Saúde Pública Sérgio Arouca; 2011.
24. Brasil. Cobertura de atenção básica em fevereiro de 2023. Brasília: Ministério da Saúde; 2023 [acesso em 01 de maio de 2024]. Disponível em: <https://egestorab.saude.gov.br/paginas/acesoPublico/relatorios/releCoberturaAPSCadastro.xhtml>.
25. Brasil. Resolução nº 1, de 25 de maio de 2015. Regulamenta os requisitos mínimos dos programas de residência médica em Medicina Geral de Família e Comunidade – R1 e R2 e dá outras providências. Brasília: Presidência da República; 2015. p. 7.
26. Oliveira AMF de, Moreira MRC, Xavier SPL, Machado MDFAS. Análise da integração ensino-serviço para a formação de residentes em medicina de família e comunidade. *Rev Bras Educ Med.* 2021;45(1):1-10.
27. Leite APT, Correia IB, Chueiri PS, Sarti TD, Jantsch AG, Waquil AP, et al. Residência em medicina de família e comunidade para a formação de recursos humanos: o que pensam gestores municipais? *Ciênc Saúde Colet.* 2021;26(6):2119-30.
28. Ceccim RB. Educação permanente em saúde: desafio ambicioso e necessário. *Interface Comun Saúde Educ.* 2005;9(16):161-77.
29. Brasil. Política Nacional de Educação Permanente em Saúde. Brasília; 2009. 64 p.
30. Sarti TD, Lazarini WS, Fontenelle LF, Almeida APSC. Organization of primary health care in pandemics. *Rev Bras Med Fam Comunidade.* 2021;16(43):2655.
31. Esposti CDD, Ferreira L, Szpilman ARM, Cruz MM da. O papel da educação permanente em saúde na atenção primária e a pandemia de Covid-19. *Rev Bras Pesqui Saúde.* 2020;22(1):4-8.
32. Brasil. Plano Nacional de Fortalecimento das Residências em Saúde. Brasília: Ministério da Saúde; 2021. 27 p.
33. Poli Neto P, Faoro NT, Prado Júnior JC do, Pisco LAC. Remuneração variável na atenção primária à saúde: relato das experiências de Curitiba e Rio de Janeiro, no Brasil, e de Lisboa, em Portugal. *Ciênc Saúde Colet.* 2016;21(5):1377-88.
34. Brasil. Portaria nº 3147, de 28 de dezembro de 2012. Institui as especificações “preceptor” e “residente” no cadastro médico que atua em qualquer uma das Equipes de Saúde da Família previstas na Portaria Nacional de Atenção Básica, que trata a Portaria nº 2488/GM. Brasília; 2012. p. 1-3.
35. Brasil. Resolução nº 3, de 20 de junho de 2014. Institui Diretrizes Curriculares Nacionais do Curso de Graduação em Medicina e dá outras providências. Brasília: Ministério da Educação; 2014. p. 14.
36. Gaion JP de BF, Kishi RGB, Nordi AB de A. Preceptor na atenção primária durante as primeiras séries de um curso de Medicina. *Rev Bras Educ Med.* 2022;46(3) : e096.
37. Cuoghi HF, Germano CMR, Melo DG, Avó LR da S de. Currículo médico baseado em competência e especialização voltada à atuação na atenção primária à saúde. *Rev Bras Educ Med.* 2022;46(1):1-9.
38. Tiseo TR, Santos MCL dos, Smiderle C de ASL. Estágio em medicina de família e comunidade em unidades com residência médica no município do Rio de Janeiro. *Rev Bras Med Fam Comunidade.* 2022;17(44):3101.
39. Brasil. Portaria Interministerial nº 1.127, de 4 de agosto de 2015. Institui as diretrizes para a celebração dos Contratos Organizativos de Ação Pública Ensino-Saúde (COAPES), para o fortalecimento da integração entre ensino, serviços e comunidade no âmbito do Sistema Único de Saúde (SUS). Brasília: Ministério da Saúde e Ministério da Educação; 2015. p. 1-9.



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