

## Prevalence of not receiving a home visit by Community Health Agents in Brazil and associated factors

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**Abstract** *This article aimed to identify the prevalence of not receiving a home visit by a community health agent (CHA) and the factors associated with it. This was a cross-sectional study, conducted with 38,865 health teams and 140,444 users in the entire country, who participated in the external evaluation of the Program of Access and Quality Improvement in Primary Health (PMAQ-AB, in Portuguese) in 2017/2018. The association between not receiving a home visit by a CHA and the characteristics of the towns, teams, and individuals were estimated by the prevalence ratio (PR) with 95% confidence intervals. The prevalence of not receiving a home visit by a CHA was 18.6% and the main causes were: CHA did not visit the home, lack of knowledge of the existence of CHAs in the neighborhood or unit, and no one present at the home when the CHA visited. The probability of receiving a home visit was higher in poorer regions like the Northeast Region of the country; in towns with a smaller population; among older age users with a lower income, users with chronic health conditions, or users who have someone with a physical disability at home. The results showed that there is a need to increase the coverage of CHA visits in the country, considering that their home visits improve equity in health care.*

**Key words** *Primary Health Care, Strategic Family Health, Community Health Agents, Healthcare Equity, Access to Health Services*

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## Introduction

In the late 1980's, the Community Health Agents (CHA) program was created, an initiative aimed at the poorer places of the Northeastern Region and other locations such as the Federal District and the city of São Paulo<sup>1</sup>. It was officially implemented by the Ministry of Health (MH) as part of Brazil's Unified Health System (SUS in Portuguese) in 1991. The CHA program had the objective of increasing accessibility to the healthcare system<sup>1,2</sup>, and the CHAs were initially responsible for the development of sanitary activities, which were considered to be of low complexity and high impact<sup>3</sup>. The program promoted the increase of health education actions and disease prevention<sup>1,4</sup>, which resulted in an improvement in the indicators of health and of maternal and infant morbidity<sup>3,5</sup>. The CHAs were a new category of workers, consisting of members of the community, serving their community<sup>1</sup>, and contributed to the expansion and structuring of Primary Health Care (PHC) in the country<sup>3</sup>. Law 11,350, from October 5<sup>th</sup>, 2006, regulated the profession of CHAs, and the National Primary Health Care Policy (PNAB, in Portuguese), in that same year, listed its attributions.

Inspired by the CHA program, in 1994, the MH created the Family Health Program (FHP) which later became consolidated as a priority strategy for the reorganization of primary care in Brazil. The Family Health Strategy (FHS) had an organizational and substitutive character, challenging the traditional model of primary care. Its objective is to strengthen this model of care and the performance of SUS in terms of universal, integral, continuous and equitable care<sup>6-8</sup>, aiming to prevent diseases, promoting health, early diagnosis, and rehabilitation. The FHS team is comprised of a general physician, a nurse, and a nurse's aide, in conjunction with the CHAs<sup>9,10</sup>. Furthermore, the FHS team works in a limited geographic area, with a population of approximately 40,000 people who are registered and followed up on, and its execution is the responsibility of the municipal government<sup>9-11</sup>. By contrast, the traditional primary care teams have no fixed structure of professionals (they have more physicians, sometimes specialists), they do not work with a defined number of families or geographic area, and they generally do not include CHAs<sup>9</sup>. The traditional model focused on specific diseases, offering curative care and acting upon emerging demands, with little capacity to resolve health problems related to families and to social issues<sup>9</sup>.

In the context of the FHS, the CHAs provide overall primary health support, by visiting each family once a month regardless of need<sup>11</sup>. The home visits are the main activity of the CHAs<sup>12</sup>, to which they attribute high importance and are part of their work routine<sup>13</sup>. Through the home visits, the CHAs are prepared to produce family records and keep them updated; to help the FHS teams to identify risk areas, as well as individual and group risk situations; to refer people to the proper health services; to guide health promotion and protection; to follow the treatment and rehabilitation of sick people, following the advice of the health units; to mobilize the community to achieve better environments and health conditions, and to notify the cases of diseases which require surveillance<sup>2,14</sup>. In this context, the CHAs become a link between the community and health services, facilitating the creation of connections between users and professionals<sup>2,12</sup>.

The FHS care model, the constitution of the team and the obligations of its professionals have allowed for improvements in the quality of health care and the health indicators of the population<sup>7,8</sup>. The expansion of the FHS is associated with a reduction in infant<sup>15</sup> and elderly<sup>16</sup> mortality, deaths caused by cardiovascular diseases<sup>17</sup>, and hospitalization due to conditions that are sensitive to primary care<sup>18</sup>, and has improved prenatal care<sup>19</sup>, home health<sup>9</sup>, access to secondary prevention<sup>20</sup>, health equity, and better access and quality of health care<sup>8,16</sup>.

However, changes in the country's PNAD in 2017, concerning the configuration of the FHS teams, may transform the CHAs into an endangered professional category, not only due to the reduction in numbers of agents in each team, but also due to the de-characterization of their attributions<sup>3,21,22</sup>. These issues may discontinue connections, interactions, monitoring, and educative and preventive actions, and may increase the inequities in health. In 2020, there were 43,456 registered FHS teams, covering 63.9% of the population. This coverage is variable, and tends to be larger in rural areas than in urban areas, and larger in the poorer states of the country<sup>23</sup>, with the aim of reducing health inequities. In the same years, 257,770 CHAs integrated the FHS, with a 61.1% coverage of the population, highlighting that in 2014 there were 269,000 active CHAs, with a 65.4% coverage<sup>23</sup>.

This study aimed to identify the prevalence of not receiving a home visit by a CHA from the PHC teams and its associated factors, in the context of the National Program for Access and

Quality Improvements (PNAQ-AB, in Portuguese).

## Methodology

This is a cross-sectional study and a slice of the external evaluation phase of the PHC teams that participated in the third cycle of the PMAQ-AB and was coordinated by 37 Brazilian universities, led by Fundação Oswaldo Cruz (Fiocruz), Universidade Federal de Minas Gerais (UFMG), Universidade Federal do Rio Grande do Norte (UFRN), Universidade Federal de Pelotas (UFPel), Universidade Federal da Bahia (UFBA), Universidade Federal do Mato Grosso do Sul (UFMS), Universidade Federal do Pará (UFPA), Universidade Federal do Piauí (UFPI), and Universidade Federal de Sergipe (UFS).

The data collection instrument had six modules: I - observation at the Basic Health Unit (BHU), with questions about infrastructure; II - interview with a health professional about the PHC teams' process of work and verification of the documentation at the BHU; III - interview with users of the health unit; IV - interview with the NASF professional regarding the work process of the PHC teams and verification of the documentation at the BHU; V - observation of the infrastructure conditions, materials, and BHU inputs for oral health; VI - interview with the Oral Health Team (OHT) professionals to evaluate the work process and to verify the documentation at the BHU. The present study used information from Modules II and III<sup>24</sup>.

The outcome "not receiving a home visit by a CHA" was investigated by means of the negative response of the users to the question: "Do you receive visits from the Community Health Agent at your house?", with a dichotomous answer (yes/no).

The exposure variables used to verify an association with not receiving home visits by CHAs were: (1) from the municipalities/geopolitical region (North, Northeast, Midwest, Southeast, and South); population size in number of inhabitants (up to 10,000; 10,001-30,000; 30,001-100,000; 100,001-300,000; more than 300,000); Human Development Index of the municipality (HDI-M)<sup>25</sup>, classified as very low (0.00-0.499), low (0.500-0.599), medium (0.600-0.699), high (0.700-0.799), and very high (0.800-1.000); and the population covered by the FHS (up to 50%, 50.1%-75%, 75.1%-99.9%, 100%); from the team - population not covered by a CHA in the territo-

ry (yes; no); and from the individual - sex (male; female), age in completed years (18-39; 40-59; 60 or more), self-referred skin color (mixed race/brown/black/other and white), per capita family income in Brazilian Reais (up to R\$ 186; R\$ 186.10-300; R\$ 300.10-465; R\$ 465.10-750; R\$ 750.10 or more); from chronic health conditions indicated by medical diagnosis (none; hypertension or diabetes; hypertension and diabetes), family member with physical disability, investigated by the question: "Is there someone in your home someone with a physical disability, and who requires home care?" (yes; no), the presence of pregnancy in the last two years, investigated by the question: "Have you been pregnant in the last two years?" (yes; no), and the presence of children younger than two years of age, through the question: "Do you have a child younger than two years of age?" (yes; no).

This cycle of the PMAQ evaluation, conducted in 2017/2018, included 5,324 municipalities; 28,939 Primary Care Units; 38,865 teams; and 140,444 users throughout the country.

The questionnaire was applied at BHU facilities, on dates arranged with the municipal government, with Module II answered by a medical professional, nurse, or dentist, and Module III answered by users present at the BHU on the day of the external evaluation, thus using the process of non-probabilistic sampling to select the users. This study excluded users who were younger than 18 years of age, who were visiting the health unit for the first time, or who had not visited it for more than 12 months.

Data collection was performed by approximately 1,000 trained interviewers and supervisors from all the states of the federation, using electronic instruments (tablets) with automatic forwarding of data to the Ministry of Health. Quality control of the data was performed through the supervision of data collection and by means of an electronic validator with a check for consistency among the answers.

Descriptive analyses were conducted, and the outcome's prevalence was calculated according to the characteristics of the municipalities, the teams, and the individuals. The analysis of associated factors was performed using the Chi-squared test for heterogeneity and the linear trend test. Next, the Poisson Regression with robust adjustment of variance was used to estimate the prevalence ratios (PR) with their respective 95% confidence intervals (95%CI) For the adjusted analysis, a hierarchical model was used, in which the variable "region" was included at the

first level; at the second level, the variables related to the municipalities; at the third level, a variable related to the teams; at the fourth level, variables that related to demographic and social characteristics of the individuals; and at the fifth level, the individual health conditions. Backward selection was applied, by hierarchical level, eliminating all the variables with values below  $p \geq 0.20$  from the model. The statistical significance was verified by the Wald test, and heterogeneity, considering a level of 5%. In the analyses, the Stata 14.0 statistical package (StataCorp LP, College Station, USA) was used.

The project was submitted to and approved by the Research Ethics Committee of Universidade Federal de Pelotas, through Decision number 2,453,320, in 2017, logged under protocol number 80341517.8.1001.5317. All of the participants signed a Free and Informed Consent Term. The authors declare that there is no conflict of interest in relation to the theme of this study.

## Results

From the total number of interviewees, this study obtained information on 139,362 users related to teams with CHAs (99.2%). The majority of these users were concentrated in the Northeast region (37.3%) and the Southeast region (33.4%); 40.0% resided in towns with less than 30,000 inhabitants and more than half (50.4%) lived in towns with HDI classified as very low, low, and medium; 45.1% lived in towns with 100% FHS coverage; and 40.0% were related to teams that reported a population not covered by CHAs. Among the characteristics of the users, the majority was female (78.4%), between 18 and 49 years of age (77.9%), and were brown, yellow, or indigenous (68.1%). The average per capita income was R\$ 535.80; 28.3% of the users reported being hypertensive or diabetic, while 9.1% had both conditions; 7.8% reported having a family member with disabilities at home (Table 1).

The prevalence of not receiving a home visit from a CHA was 18.6% (95%CI 18.4-18.8) (Table 2). Concerning the reasons, 52.0% of the users reported that the CHAs in their areas do not make home visits, 26.0% ignored the existence of a CHA in their neighborhood or unit, and 10.9% reported that during the working hours of the CHAs, there was no one at home to receive them (Figure 1).

According to the rough analysis, the probability of not receiving a home visit from a CHA

was significantly higher in all regions when compared to the Northeast, in towns with a larger population and a higher HGDI-M; among users from towns with an FHS coverage below 100%; among younger and richer male users; among users without health problems; and among users who do not have a family member with physical disabilities at home (Table 2).

In the adjusted analysis according to the hierarchical model, the South, Midwest and North regions had a 43% to 48% greater probability of not receiving home visits from CHAs, as compared to the Northeast region. The users from towns with a larger population and less FHS coverage showed a greater probability of not receiving a home visit from a CHA, with an increased linear trend of this probability when considering the increase in population size and the decline in FHS coverage. Users who received medical care provided by teams that reported working with an uncovered population were 74% more likely not to receive home visits by a CHA (Table 2).

The probability of not receiving a home visit by a CHA was 17% higher among female users when compared to males; 28% and 13% higher among users who were 18 to 39 and 40 to 59 years of age, respectively, when compared to the elderly; 14% higher among the richest users, when compared to the poorest; 8% higher among users with chronic health conditions (hypertension and diabetes); and 17% more likely among interviewees who did not report having a family member with a physical disability at home (Table 2).

## Discussion

This is one of the first nationwide studies dedicated to evaluating the prevalence of not receiving a home visit by a CHA in the primary care teams, as well as to investigating the regional, municipal, sociodemographic, and health-related differences. The results of this study provided evidence of a considerable prevalence of not receiving a home visit by a CHA among the regular users covered by teams that reported the presence of that professional. This finding is similar to what was observed by Giovanella *et al.*<sup>26</sup> in a recent study conducted with data from the 2013 and the 2019 National Health Survey (NHS).

Not receiving visits by a CHA may be related to the insufficient number of those professionals in the teams throughout the country. Our study illustrated that 40% of the interviewed users are connected to teams with populations who are not

**Table 1.** Distribution of the user sample according to the characteristics of the municipalities, the teams, and the individuals. PMAQ Cycle III, Brazil, 2017/2018.

Variable	Total of sample	
	n=139,362	100.0%
<b>Characteristics of the municipality</b>		
Region		
South	19,971	14.3
Southeast	46,609	33.4
Midwest	11,723	8.4
Northeast	51,956	37.3
North	9,103	6.5
Size of municipality (inhabitants)		
Up to 10,000	18,198	13.1
10,001-30,000	37,795	27.1
30,001-100,000	33,102	23.8
100,001-300,000	18,783	13.5
More than 300,000	31,484	22.6
HDI-M		
0,000-0,499	443	0.32
0,500-0,599	25,876	18.6
0,600-0,699	43,857	31.5
0,700-0,799	56,537	40.6
0,800-1,000	12,621	9.1
Family healthcare coverage (%)		
Up to 50	20,535	14.7
50,1-75,0	26,734	19.2
75,1-99,9	29,256	21.0
100,0	62,837	45.1
<b>Characteristics of the team</b>		
Is there a population not covered by the FHS		
Yes	55,478	39.8
No	83,884	60.2

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**Table 1.** Distribution of the user sample according to the characteristics of the municipalities, the teams, and the individuals. PMAQ Cycle III, Brazil, 2017/2018.

Variable	Total of sample	
	n=139,362	100.0%
<b>Individual characteristics</b>		
Sex		
Female	109,294	78.4
Male	30,068	21.6
Age (years)		
18-39	60,697	43.6
40-59	47,758	34.3
60 or over	30,907	22.2
Skin color		
White	43,937	31.9
Mixed/Brown/ Black/ Other	93,645	68.1
Per capita income (Reais)		
Quintile 1 (+poor)	28,168	20.2
2	29,409	21.1
3	26,741	19.2
4	29,348	21.1
Quintile 5 (+rich)	25,608	18.4
Chronic condition		
None	86,779	62.6
SAH or DM	39,276	28.3
SAH and DM	12,613	9.1
Someone with a physical disability at home		
Yes	10,878	7.8
No	128,342	92.2
Pregnancy in the last 2 years		
Yes	20,953	19.2
No	88,358	80.8
Has a child of up to 2 years of age		
Yes	15,621	11.2
No	123,521	88.8

HDI-M: Human Development Index - Municipality.

Source: Authors.

covered by CHAs. A nationwide study conducted with data from the NHS found that there was an increase in the proportion of homes that had not received a visit from a CHA in the previous 12 months, going from 17.7% in 2013 to 23.8% in 2019. The proportion of homes which did not have a monthly visit by a CHA in the last year rose from 47.2% in 2013 to 38.4% in 2019<sup>26</sup>.

The health teams participating in the survey were mostly FHS teams<sup>27,28</sup>, and were therefore expected to have a full Family Health team with 100% coverage. The home visit by the CHAs to the families under their responsibility is one of

the main elements which characterizes the FHS. The visits must occur in a routine manner and be geared towards the needs and demands of the families and locations<sup>26</sup>, establishing connections with sanitary responsibility and care focused on the individual and not on the disease<sup>3</sup>.

The poor coverage may already be a result from the 2017 PNAB, which proposed that the presence of a CHA in the teams is not mandatory, and that the numbers of those professionals should be reduced, besides not giving priority to the FHS as a model for the CHAs from the standpoint of financial induction<sup>21</sup>. When the PNAB

**Table 2.** Prevalence, Prevalence Ratio (PR), and 95% confidence interval (95%CI) of not receiving a home visit by a CHA, according to the characteristics of the municipalities, the teams, and the individuals. PMAQ Cycle III, Brazil, 2017/2018 (n=137,874).

Variable	Prevalence	Non-adjusted PR*		Adjusted PR*	
	%	PR	CI95%	PR	CI95%
<b>Level 1</b>	18.6				
Region			<0.001	-	-
Northeast	15.7	1.00		-	-
North	22.5	1.43	1.37-1.49	-	-
Midwest	23.3	1.48	1.42-1.54	-	-
Southeast	18.2	1.16	1.12-1.19	-	-
South	22.5	1.43	1.38-1.48	-	-
<b>Level 2</b>					
Size of municipality (Inhabitants)			<0.001		<0.001
Up to 10,000	11.1	1.00	-	1.00	-
10,001-30,000	13.3	1.20	1.15-1.26	1.16	1.10-1.22
30,001-100,000	17.9	1.61	1.54-1.69	1.34	1.27-1.41
100,001-300,000	23.8	2.15	2.04-2.25	1.60	1.51-1.69
More than 300,000	26.9	2.43	2.32-2.54	1.80	1.70-1.91
HDI-M			<0.001		0.219
0.000-0.499	13.8	1.00	-	1.0	-
0.500-0.599	12.7	0.92	0.73-1.16	1.07	0.85-1.35
0.600-0.699	15.5	1.12	0.89-1.42	1.13	0.90-1.42
0.700-0.799	22.4	1.62	1.29-2.05	1.18	0.93-1.49
0.800-1.000	24.3	1.76	1.39-2.23	1.07	0.84-1.36
Family healthcare coverage (%)			<0.001		<0.001
100,0	12.3	1.00		1.0	
75.1-99.9	20.9	1.70	1.65-1.75	1.41	1.36-1.46
50.1-75.0	25.9	2.11	2.05-2.18	1.60	1.53-1.66
Up to 50	25.1	2.04	1.98-2.11	1.45	1.38-1.51
<b>Level 3</b>					
Is there a population not covered by the FHS			<0.001		<0.001
No	13.2	1.00		1.0	
Yes	26.8	2.03	1.98-2.07	1.74	1.70-1.78

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allows the teams not to have CHAs or to have a smaller number of those professionals, politics ends up flexibilizing coverage and reducing home visits. This weakens the FHS structure and compromises educational and health promotion actions in the community, as well as their social determination<sup>3,29</sup>. Such a scenario emphasizes the perspective of selective primary care weakening the perspective of substituting the primary care model and reordering the network from the standpoint of primary care<sup>3</sup>.

Reducing the number of CHAs in the teams is a step backward in terms of the FHS principles and guidelines, indicating that they are being substituted by a traditional model of primary

care<sup>3,30</sup>. Experts in the area affirm that the guarantee of having complete teams with doctors, dentists, nurse's aides, and CHAs throughout the country is essential for the universalization of the FHS, for the effectiveness of its principles and attributes, as well as for the quality of health care<sup>8</sup>. The positive effect of the FHS on epidemiological indicators evidenced by literature would not be possible without the presence of the CHAs and their care to the families in the territory where they work<sup>31</sup>.

Besides the reduction in the number of these professionals, the CHAs also face work overloads due to the complexity of the activities performed and the attribution of work that is outside their

**Table 2.** Prevalence, Prevalence Ratio (PR), and 95% confidence interval (95%CI) of not receiving a home visit by a CHA, according to the characteristics of the municipalities, the teams, and the individuals. PMAQ Cycle III, Brazil, 2017/2018 (n=137,874).

Variable	Prevalence	Non-adjusted PR*		Adjusted PR*	
	%	PR	CI95%	PR	CI95%
<b>Level 4</b>					
Sex			<0.001		<0.001
Male	16.1	1.00		1.0	
Female	19.2	1.19	1.16-1.23	1.17	1.13-1.20
Age (years)			<0.001		<0.001
60 or over	16.7	1.00		1.0	
40-59	18.1	1.08	1.05-1.12	1.13	1.10-1.17
18-39	19.9	1.19	1.15-1.22	1.28	1.24-1.32
Skin color/Ethnicity			0.237		-
White	18.8	1.00		-	
Mixed/Brown/ Black/Other	18.5	0.98	0.96-1.01	-	-
Per capita income (Reais)			<0.001		<0.001
Quintile 1 (+poor)	16.6	1.00		1.0	
2	18.3	1.11	1.07-1.15	1.03	0.99-1.07
3	18.7	1.13	1.09-1.17	1.05	1.01-1.09
4	19.2	1.16	1.12-1.20	1.07	1.03-1.11
Quintile 5 (+rich)	20.2	1.22	1.18-1.27	1.14	1.10-1.19
<b>Level 5</b>					
Chronic Condition			<0.001		0.001
SAH and DM	17.2	1.00		1.0	
SAH or DM	17.5	1.02	0.97-1.06	1.03	0.99-1.08
None	19.2	1.11	1.07-1.16	1.08	1.03-1.13
Someone with a physical disability at home			<0.001		<0.001
Yes	16.1	1.00		1.0	
No	18.8	1.16	1.11-1.22	1.17	1.12-1.22
Pregnancy in the last 2 years			0.282		-
Yes	19.5	1.00		-	
No	19.2	0.98	0.95-1.01	-	-
Has a child of up to 2 years of age			0.604		-
Yes	18.7	1.00		-	
No	18.5	0.99	0.96-1.02	-	-

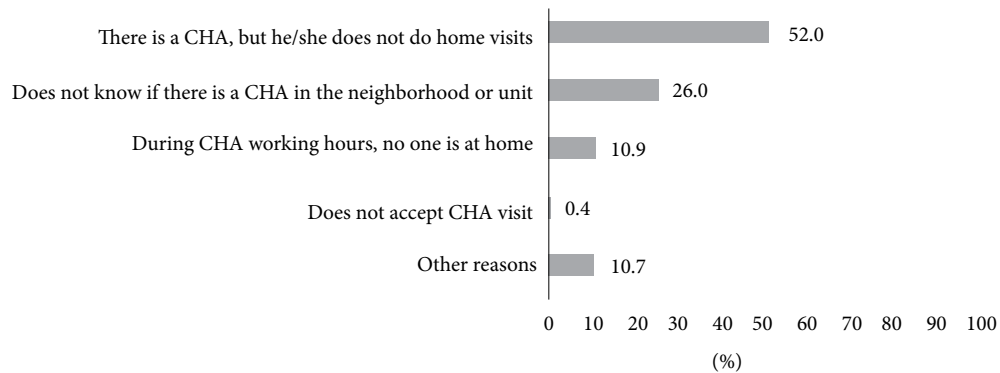
\*Poisson Regression.

Source: Authors.

scope of action, thus limiting the time available for home visits<sup>13,22,32,33</sup>. The work of the CHAs have often been focused on bureaucratic tasks and tasks of support provided to health units, for instance, sorting out files on the users, reception and welcoming, organization of lines, making phone calls, and even cleaning tasks, considered a deviation of function by the CHAs themselves<sup>13</sup>.

There is evidence in the literature regarding the functions, strengths, and contributions of the work of the CHAs throughout the coun-

try<sup>3,12,26,31-33</sup>; however, they have been losing some attributions, such as the demographic and sociocultural diagnosis of the community, and have been consolidating the commitment with fragmented activities, such as filing documents of the users of the micro-area<sup>3</sup>. One nationwide study showed fragilities related to the mapping of the FHS territories, neglecting the social context, since 84% of the teams used maps to define their territory, but only 6% of the teams that we studied indicated socioeconomic conditions of



**Figure 1.** Prevalence of not receiving a home visit. PMAQ Cycle III, Brazil, 2017/2018.

Source: Authors.

the areas as part of their sanitary responsibility<sup>34</sup>. Another nationwide study called attention to the small proportion of the verification of the homes' environmental conditions, of follow-up of people who receive the *Bolsa Família* benefits, and of the active search for missing users by the CHAs, which indicate that the organization of the work teams may be compromised<sup>31</sup>.

To make the scenario even worse, the 2017 PNAB presents a proposal for the attributions of the CHAs<sup>21</sup>, which de-characterize the nature of their educational work<sup>22</sup> and allow for the expansion of their attributions, for example, by unifying their actions with those of the Endemic Agents and attributing responsibilities currently performed by nurse's aides, such as checking blood pressure and capillary glycemia, checking temperatures, and changing bandages<sup>35</sup>. Another study by Silva *et al.*<sup>22</sup> showed that the CHAs themselves recognize the centrality of educational actions in their work and understand that the incorporation of attributions from the clinical area will produce an undesired dispute between the preventive nature of health promotion and the performance of procedures considered curative, which had previously been attributed to nurse's aides.

The proposal of the reduction in the number of CHAs per team, coupled with the significant alterations regarding attributions<sup>21</sup> and the formation of the CHAs<sup>36</sup> are reflections of the idea that the CHAs are not workers that are required

in every context, and that they are relatively ineffective, with the assumption that, in order to make themselves useful, the CHAs must take over specific activities normally attributed to the clinical area<sup>3</sup>. Those proposals reinforce the idea of responsibility and effectiveness supported by the clinical and procedural concepts, which are pillars of the biomedical model of health care<sup>3</sup>.

The results of the current study also show that the home visit by a CHA promotes health equity, since its prevalence is higher in poorer places like the Northeastern region of the country; in towns with smaller populations; and among users who are older and have less income, who have chronic health conditions, or who have a relative with physical disabilities at home. The contribution of the work of the CHAs and the FHS teams in improving the health indicators and promoting health equity is widely recognized and published in literature<sup>5,8,9,12,16,26,37</sup>.

An international systematic review study<sup>37</sup> demonstrated that programs with CHAs promote equity in access to health, reducing the inequalities related to place of residency, gender, education, and socioeconomic position. The factors which promoted more equity were the proximity of the services to the families, social relationships with the CHAs, providing services at homes, providing free care, providing care to the poorest families, and sensibilization and mobilization of the community<sup>37</sup>. One national study showed that the updating of family files (an attribution



of the CHAs) was positively associated with reporting the FHS as a common source of health care, as a manner of reaching longitudinality in care, and that such an association was stronger in the poorest regions of the country (Northeast, North, and Midwest)<sup>38</sup>. In this sense, studies have been discussing the implications of the changes proposed by the 2017 PNAB in health care provided to the population, with the likelihood of increasing the inequalities in access to and integrity of care<sup>3,39</sup>.

Faced with the current scenario, it is important to highlight the need to debate the changes proposed by the PNAB and to monitor the impacts of those changes in the health of the population, especially its most vulnerable segments. We must also call attention to the fact that the results found in this study represent further evidence of the importance of the CHAs as part of the health teams and their actions in the community, performing educational work by preventing diseases and promoting health. The formation and qualification of the CHAs is essential, and must seek quality in the work with the families in the community, rather than attributing new functions that are already the responsibility of other professionals, which would completely change the nature of the CHAs scope of performance.

What still remains as a challenge is reducing the precarious connections that were a result of the recent changes in labor laws, which point to the reduction in rights and to more labor insecurity<sup>3</sup>. Moreover, the minimum wage for the profession continues to be a strategic agenda of the organized labor movement of the CHAs, which relates to the financial restrictions that affect the towns and which are likely to increase with the freezing of the municipalities' budgets for the next 20 years<sup>3,29</sup>. Some studies indicate that the CHAs work is more successful when it is based on local needs, efficient management, motiva-

tion, material support, supervision, ongoing education, and technical training required for their professional performance<sup>3,12</sup>.

One of the limitations of this study is that there was no definition of the recording period for the investigation of the outcome, nor a question about the frequency in which users receive a home visit by a CHA. There is some difficulty to compare with data collected in cycles I and II of the PMAQ, due to the changes made to the instruments of external evaluation. Moreover, we cannot ignore the selection bias, considering that the adherence of the teams to the PMAQ was voluntary, even though Cycle III of the program, conducted in 2017/2018, counted on almost universal adherence. The inclusion of the interviewed users also took place by non-probabilistic sampling, with a broad sample of users from the primary health system throughout country.

With this study, it can be concluded that there is a considerable prevalence of not receiving a visit by a CHA among regular users of the health teams with this professional. It is important to highlight that the presence of the CHA in the team is essential in order to consolidate the principles of SUS and the attributes of primary health care and the FHS. The work of the CHAs with the community strengthens care, connections, and the interaction of the users with the services, with the professionals, and with educational and health promoting actions aimed at the social context. Furthermore, the results of this study bring more evidence concerning the role of the home visit by a CHA in the promotion of health equity, offering access to users who are socially vulnerable and have worse health conditions, as well as to families with pregnant women and children. We therefore suggest that further studies should be conducted concerning the quality of home visits by a CHA among the users who receive this type of medical care.

## Collaborations

M Kessler, E Thumé, LA Facchini and E Tomasi participated in the conception, design, analysis, writing of the article and critical review. All authors approved the version to be published.

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