

Needs and dynamics of the Primary Healthcare workforce in Brazil

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Abstract *Primary care and the healthcare workforce can be considered the greatest challenges of SUS (Sistema Único de Saúde), principally in recent decades. This article aims to describe the growth and regional distribution of the professions requiring higher education registered in the primary healthcare units. This descriptive study with a quantitative approach is concerned with the 14 accredited professions in the five major regions of Brazil from 2008 to 2013. The data was collected from the national database of the Ministry of Health. Among the professional categories with the greatest rates of national growth are physical education teachers, nutritionists, occupational therapists, physiotherapists, and pharmacists. In the North region of Brazil, physiotherapy, social work, and speech therapy stand out as having the greatest growth rates; in the Northeast, physical education, physiotherapy, and occupational therapy; and in the Center-West, nutrition and physiotherapy; in the Southeast, nutrition and pharmacology; and physical education showed prominent growth in the South. The major losses occurred in the professions of biologist and veterinary doctors in all regions. In general, the professional categories that comprise the Family Health Support Nuclei, NASF, demonstrate greater growth rates than nurses and doctors.*

Key words *Healthcare workforce, Basic Care Unit (UBS), Healthcare*

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Introduction

In Brazil, the 1987 report “The Issue of Human Resources and Health Reform” highlighted some of the obstacles to consolidating the universalization of coverage and guarantee of equity of health actions during the creation of the SUS (*Sistema Único de Saúde*, or Unified Health System). These include the geographical, social, and institutional distribution of human resources, which concentrated 56% of jobs in the Southeast region and only 20% in the Northeast region; inequality in the conditions for insertion into the labor market (e.g. segmentation); the training and preparation of human resources; the composition of teams in which 60-70% of employed personnel at the health facilities were doctors and attendants; and the appreciation of the professional¹.

Throughout the 1980s, all the professional categories requiring higher education in health experienced growth in the number of jobs in the sector, although not in the same proportion. Some categories grew more than 100%, such as in the case of doctors (125.64%) and nurses (142.94%), while others showed a performance less than 50%. Pharmacists grew only 34.37% in the same period, possibly in response to technological advances and industrialization, which resulted in the percentage reduction of their participation in the STF (Systemic Transformation Facility)^{2,3}.

In the last two decades, the growth of professionals and employments in health has been observed in Brazil, which is a country of continental dimensions with innumerable regional and social inequalities. Since the beginning of the 1990s, the Unified Health System (SUS) is the public component of the Brazilian healthcare system that represents nearly two million jobs – it makes up more than 60% of the facilities, attends approximately 80% of the population, and absorbs in the area of 80% of the sector’s labor force. The network of SUS facilities is the main employer of the country, and 52% of nurses, 44% of doctors, 27% of dentists, 11% of pharmacists, and 10% of psychologists are public sector employees⁴.

SUS is organized into three levels of healthcare. Primary Care (AB, or *Atenção Básica*) is characterized by a group of actions in the individual and collective sphere, carried out by multi-professional teams that aim for the promotion and protection of health, the prevention of diseases, diagnosis, treatment, rehabilitation, and health maintenance. It is considered the preferred point of access of the system’s user popu-

lation. According to the National Policy of Primary Care (PNAB, *Política Nacional de Atenção Básica*), the Basic Health Units (UBS), with or without Family Health, are indispensable to the execution of Primary Care health actions in the municipalities and in the Federal District (DF)⁵.

In Brazil, the Ministry of Health implemented Family Health as a strategy for structuring Primary Care. Initially, in terms of the composition of the group, it proposed a doctor, nurse, nurses’ aide or technician, and community health agents. Later, it broadened its scope, integrating Oral Health with a dental surgeon, dentistry assistant or technician in dental hygiene. Following this, it implemented Family Health Support Centers (NASF, *Núcleos de Apoio à Saúde da Família*), integrating other professional categories according to local health needs.

Thus, for the provision of healthcare, the UBS must provide, at a minimum, multi-professional teams comprised of a doctor, nurse, dental surgeon, dentists’ and nurses’ aides or technicians, and a community health agent, among others. Furthermore, in the recommended care offered in conjunction with the NASF teams, the USB has come to have a psychologist, physiotherapist, pharmacist, and a physical education professional, among others^{6,7}.

For their part, the majority of Brazilian studies done about the STF refer to the category of nursing in its different work scenarios, and there are few related to all of the health professions found in Primary Care. Another aspect of these studies is their methodology in which the variables of analysis focused predominantly on the scale of the STF⁸.

Considering the growth of Primary Care and the training of health professionals in Brazil, as well as the need for information on the STF for the management of the system, this article looks at describing the growth and regional distributions of the higher level professions registered in the Health Center/Basic Health Unit facilities in the last five years. It seeks to identify the intra- and inter-regional disparities, contributing to the debate on planning and scaling of the SUS labor force.

Methodology

This article describes a retrospective descriptive-analytic study with a quantitative approach about the growth and distribution of the higher-level health professions in Brazil and its re-

spective regions, registered in establishments like the Health Center/Basic Health Unit in the National Registry of Health Establishments (CNES, or *Cadastro Nacional de Estabelecimentos de Saúde*). The data was extracted from the online database of the IT Department of the Health Ministry (DATASUS), covering the period from 2008 to 2013.

The fourteen upper-level professions analyzed were as follows: social workers, biologists, biomedical doctors, dental surgeons (orthodontists or dentists), professionals in physical education, nurses, pharmacists, physiotherapist, speech pathologists, doctors, veterinary doctors, nutritionists, psychologists, and occupational therapists. These categories were selected for being considered health professionals in accordance with Resolution No. 287 from October 8, 1998, of the National Health Council (*Conselho Nacional de Saúde*, CNS)⁹.

The data was restricted to the Health Center/Basic Health Unit (UBS), defined as the unit intended for the primary and integral care of the population, planned or unplanned, that is able to offer dental assistance and other accredited professionals. In addition, (the UBS) represented 26.5% of the total number of establishments registered with CNES in December of 2013, with well-defined health teams and typology, and considered the “point of entry” to SUS by PNAB⁵.

CNES was chosen as a secondary source database, as it made available information about the workplaces (classified using the CBO, or *Código Brasileiro de Ocupações*), workers, and how many employment positions each worker has. These include all those linked to the health establishments – including professions requiring higher, medium, and basic levels of education related directly to the provision of care – and to the administrative and management spheres. This information allows for analysis according to the

different characteristics of the registered health establishments^{10,11}.

The limitations of using the CNES database concern: a) their reach, or rather the fact that managerial support services are not included, which signifies the non-inclusion of all the professionals at the administration level, linked to SUS or otherwise; and b) the strictly private establishments are still not completely registered in the CNES database, especially the medium-complexity outpatient services¹².

Data collection was carried out in October of 2014, in the online database available on the website of the IT department of the Ministry of Health, accessed at the electronic address www.datasus.gov.br, as shown in Figure 1.

The obtained data was tabulated with the program Microsoft Office Excel® and analyzed using the rate of global population growth and of each higher-level occupation in the defined period, for Brazil and its regions. This rate allows us to verify the variation of the variables of the study in the present in comparison with the past.

Findings

Between 2008 and 2013, the Brazilian population grew from 189,612,814 to 201,062,789 inhabitants, which resulted in an increase of 11,449,975 inhabitants and, therefore, a growth rate of 6% in that period. For their part, the Health Center/Basic Health Unit (CS/UBS) facilities registered in the CNES grew from 30,127 to 34,009 units, which signifies a growth of 13% in the same period.

In Figure 2, it can be observed that while the regions of the North and Center-West had population increases of 12% and 9% respectively; the Northeast, Southeast, and South grew only at a rate of 5% each. In contraposition, the CS/

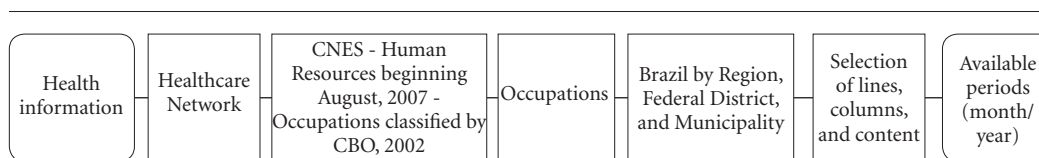


Figure 1. Flow of access and data extraction of the DATASUS webpage. Source: The authors

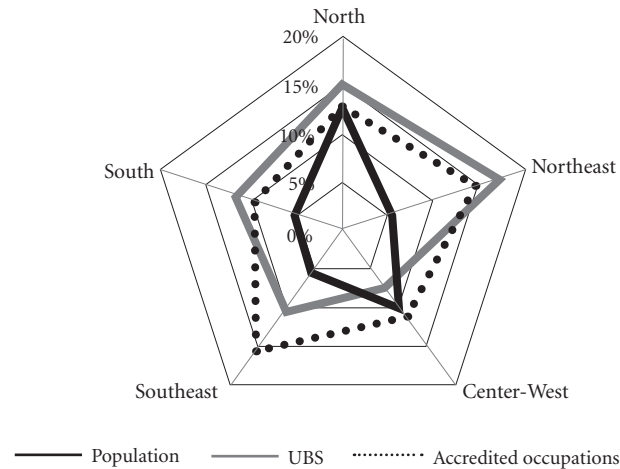


Figure 2. Growth rate of the Brazilian population, of the Health Center/Basic Health Units, and of the accredited occupations by region. Brazil, December 2008 to December 2013. Source: Ministry of Health – DATASUS (2014). Key: N = North; NE – Northeast; CW = Center-West; SE = Southeast; S = South.

UBS type facilities registered in the CNES presented a different dynamic. The greatest rates were observed in the Northeast and North (17% and 15%, respectively), while the regions of the Center-West, Southeast, and South had an increment of 7%, 10%, and 11%, respectively. However, there is agreement between the growth of the CS/UBS and the higher-level professionals registered at these facilities in the Northeast (17% and 15%) and North (15% and 13%) regions.

Professionals in physical education, nutritionists, occupational therapists, physiotherapists, and pharmacists (Table 1) are among the professional categories registered in the Health Center/Basic Health Unit of the CNES that presented the greatest rates of national growth (over 70%).

In the North region, physiotherapy, social services, and speech therapy are emphasized with the greatest growth rate (146%, 103%, and 92% respectively). In the Northeast, physical education, physiotherapy, and occupational therapy grew at rates greater than 100%. In the Center-West region, the emphases are on nutrition and physiotherapy; in the Southeast, nutrition and pharmacy; and in the South, physical education demonstrated prominent growth. In relation to negative growth, the greatest losses occurred in the biological and veterinary medi-

cine professions, in all regions, but especially in the Center-West region, with a loss of -89% and -93%, respectively (Table 1).

Discussion

The health sector in Brazil is dynamic, with high turnover of workers, and rapidly absorbing the changes in the labor market. According to Machado¹³, the classification of facilities has proven to be a difficult task due to the lack of national and international consensus about definitions and cleavage sites of the activities exercised by the different professional categories, and by the nature itself of the technological changes in health services. These factors rapidly modified the professional profile, characterized by polyvalence and the broadening of specific competencies. The new modalities of treatment, such as home care, and the Family Health Program (PSE, or *Programa Saúde da Família*) contribute to the variety of types of employability, such as temporary work contracts and other modalities of precarious labor links.

Research carried out in the period from 1991 to 2010 indicates that the greatest increase in jobs occurred in the category of nurse, with a growth of 14.6% per year, climbing from 91,211

Table 1. Growth rate of the upper level occupations registered in the Health Centers/Basic Health Units in the CNES, by region of Brazil (December 2008 – December 2013).

CBO designation 2002	North	Northeast	Center-West	Southeast	South	Brazil
Social Worker	103%	58%	66%	18%	11%	30%
Biologist	-76%	-56%	-89%	-35%	14%	-57%
Biomedical Doctor	-	-	-	-	-	-
Dental Surgeon	18%	10%	7%	8%	3%	8%
Nurse	20%	16%	25%	31%	26%	24%
Pharmacist*	54%	45%	78%	95%	59%	75%
Physiotherapist	146%	168%	81%	55%	44%	78%
Speech Pathologist	92%	171%	42%	38%	46%	55%
Doctor	2%	2%	-1%	5%	1%	3%
Veterinarian	-56%	-41%	-93%	-44%	-69%	-52%
Nutritionist	71%	88%	86%	93%	62%	83%
Phys-Ed Teacher±	50%	169%	0%	83%	627%	145%
Psychologist	66%	112%	50%	36%	18%	43%
Occupational Therapist	-13%	140%	58%	76%	62%	79%

Source: Ministry of Health – DATASUS (2014). N = North; NE = Northeast; CO = Center-West; SE = Southeast; S = South. ± Physical Education Teacher – Primary School, Physical Education Teacher – Middle School, Physical education teacher – High School. *Pharmacists / bio-chemists are excluded.

to 355,383 professionals. Following this, nutritionists and pharmacists grew with significant increases of 11.5% and 9.5% respectively; Veterinarians (8%), Physiotherapists (7.6%), Social Workers (6.7%), Psychologists (6.1%), and Biologists (5.2%). Among the professionals that grew the least in the studied period were Doctors and Dentists, with 3% each¹⁴.

In addition to the global labor market, the expansion of Primary Care and the increase in jobs at the health facilities can have a direct impact on the regional growth and distribution of the higher-level professions, as demonstrated in the data of this study. In fact, one of the principles of primary care is decentralization. Thus, the Family Health teams should be as close as possible to the service's user base, and the UBS consists of the type of health facility predominantly at this level of care.

Between 1981 and 2008, the number of persons seeking Primary Care grew close to 450%, a fact that owes much to the growth of the number of UBS and the broadening of the STF⁵. This growth continues in the following period, especially through the expansion of the PSE, previously, and by the Family Health Strategy (ESF) and the implementation of the Family Health Support Centers (NASF).

Admittedly, the UBS are the points of care provision with the most capillary power in the

system. According to the PNAB, the UBS is the fundamental facility at this level of attention and can have or not have Family Health teams. Data from the Ministry of Health show that 63% of the Brazilian population are covered by the Family Health Plan. Therefore, these teams include the insertion of general practitioners or family and community doctors, nurses, nurses' assistants and technicians, and Community Health Agents (ACS). Lesser in number are the teams of Dental Health, types I and II, comprised of dental surgeons, and dental health assistants and technicians. Finally, there are the NASF teams - types I, II, and III – whose composition varies according with the work schedule and makeup of the teams in different local realities. In the large urban centers, the Ministry of Health recommends that the USB without a ESF attend a maximum of 18,000 inhabitants, and with an ESF up to 12,000 inhabitants⁴.

The composition of the NASF teams (I, II, and III) includes the following job categories in the Brazilian Occupational Code (CBO): Social Worker; Physical Education Teacher/Professor; Pharmacist; Physiotherapist; Speech Therapist; Obstetrician/Gynecologist; Pediatrician; Acupuncturist; Homeopathic Doctor; Psychiatrist; Geriatric Doctor; Doctor of Internal and Clinical Medicine; Occupational Health Doctor; Veterinarian; Nutritionist; Psychologist; Occupation-

al Therapist; Art Educator; and Sanitary Health Professional, or a certified health professional with a graduate degree in public or collective health, or with a degree directly related to these areas¹⁵.

An analysis of the growth rates of each of these fourteen profession, drawing on the data pertaining to Brazil, suggest a direct relationship with the organization and dynamics of the SUS primary care, especially the ESF and NASF.

Between 2008 and 2013, the population of the country grew at a rate of 6%; the CS/UBS registered with CNES grew 12%; and the number of accredited professionals registered in the CS/UBS grew 24%. This data reveals a significant expansion of the installed capacity, an increase in the number of jobs, and the possibility of expanding the labor force of various accredited professionals at this type of health establishment in the framework of SUS.

In analyzing the regional dynamic of the basic rate of growth (Figure 1), the first phenomenon observed is the distortion between the demographic growth and the growth in the number of registered CS/UBS in the CNES during the studied period. While the North and Center-West regions presented the greatest demographic growth, the Northeast and Southeast saw an expansion in the CS/UBS registrations that was three percentage points above the national average. The same phenomenon can be observed if we compare the growth of the general population and the growth of accredited professionals registered in the CS/UBS.

When the regions that polarize the growth rate of the analyzed health facilities and the greatest growth rates of accredited occupations, we observe that physiotherapists, speech therapists, physical education professionals, psychologists, and occupational therapists grew more than 100% in the Northeast, while pharmacists were emphasized in the Southeast region (95%). Nutritionists grew at similar rates in both regions, between 88 and 93%.

The results show that while doctors represent the numerically hegemonic category of the health sector and have shown a significant growth in the number of jobs in the 1970s and 80s, the internal composition of the workforce in the field of health has diversified in recent decades, and new accredited professions requiring higher education were included, such as speech therapists and physiotherapists¹⁶.

Final considerations

With PNAB understood as the main national point of reference, and considering a minimum team to be comprised of a doctor, nurse, and dental surgeon, the following phenomenon was observed between 2008 and 2013: in Brazil, nurses and doctors registered in the CS/UBS grew at rates of 42% and 17%, while dental surgeons grew only 8%

In general, the professional categories that can comprise the NASF teams presented much higher growth than nurses and doctors, with rates above 70%, as in the case of pharmacists, physiotherapists, nutritionists, physical education professionals, and occupational therapists. In addition, speech therapists and psychologists grew in the area of 50%. These latter increases were probably also aided by the creation of the Street Consulting plan, a point of care that is developed in specific installations on city streets, in mobile units, and also in UBS installations in the territory they serve, aimed at itinerant populations. These efforts are always articulated and developed in partnership with the other CS/UBS and NASF teams, Centers For Psycho-social Care (*Centros de Atenção Psicossocial*, or CAPS), and other points of service in the care network, as well as with the component services and institutions of the Unified Welfare System (*Sistema Único de Assistência Social*, or SUAS).

While the findings of this article clearly demonstrate the increase in the accredited workforce in other regions of the country, with an emphasis on the Northeast, and an increase in the participation of other professional categories of Primary Care, such as pharmacists, physiotherapists, physical education professionals, and occupational therapists, many issues still need to be investigated, such as:

- What factors determine the increase of certain professional categories in one region and not in another, for example an increase of physiotherapists, speech therapist, physical education professionals, psychologists, and occupational therapists in the Northeast, and an increase of pharmacists in the Southeast?
- What factors lead professionals to settle in jobs more or less situated in Primary Care in the Brazilian regions?

Thus, we suggest further studies of a qualitative nature with the objective of broadening the debate on the composition and distribution of the workforce in Primary Care, as well as clarifying the phenomena observed in this study.

Collaborations

MH Sakai, EMO Dalla Costa, and SN Leite worked on the conceptualization and on the final draft; MN Carvalho and CRR Gil worked on the conceptualization, research, methodology, and on the final draft.

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