



## Centers of Dental Specialties in the Context of Oral Health Attention Regionalization in Brazil: PMAQ-CEO Results

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Academic Editors: Alessandro Leite Cavalcanti and Wilton Wilney Nascimento Padilha

Received: 27 September 2017 / Accepted: 19 March 2018 / Published: 23 March 2018

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### Abstract

**Objective:** To describe the distribution of Centers of Dental Specialties by Brazilian health regions and analyze the intermunicipal consortia as an alternative management of provision of oral health in the medium complexity. **Material and Methods:** The quantitative database of the external evaluation of the first-cycle PMAQ CEO directed to the CEO Manager was explored (Module II - 4.1), which seeks to identify the relationship of professionals and locate the consortium-type management. To obtain data about health regions, the interfederative department of Strategic and Participative Management of the Health Ministry of Brazil database has been consulted. **Results:** In national perspective, of the 438 health regions, 78.1% (n = 342) have at least one service implanted. Under federal management, only university services: 02 in Pará and 01 in Santa Catarina. There are 40 services under state management (4.3% of the total in Brazil), half of which are under the model of consortiums between state and municipalities, especially Ceará, with fifteen and Paraná with five. Municipals consortiums are institutional arrangements still incipient: 4.62% of specialized dental clinics in Brazil. **Conclusion:** There was a rapid expansion of Centers of Dental Specialties after ten years of their implementation, demonstrating a healthy capillarity and a great capacity for the implementation of Health Policies. The incipient supply of medium complexity oral health services via specialized dental clinics of the consortium-type management model was verified.

**Keywords:** Health Services Administration; Oral Health; Quality of Health Care.

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## Introduction

The decentralization of health system management implies the transfer of decision-making power on health policies from federal and state level to municipalities. This proposal gained strength in Brazil during the 1980s and had as its background the democratic transition and the economic crisis, a period of great political boiling that culminated in the formation of the 1988 Federal Constitution and the emergence of the Unified Health System (SUS) [1].

SUS is, therefore, a state policy, being the form to materializing what is written in the 1988 Constitution, having as principles universality, equity and integrality of health care; and among the organizational guidelines: decentralization, regionalization and hierarchization [2].

Regionalization presupposes the territorial delimitation for the organization of health units, with the objective of integrating them in a hierarchical network, guaranteeing access, reception and integrality in health care [2]. As a result of regionalization, it is hoped to expand access to health services actions to meet local-regional needs, to increase social participation and to improve efficiency in resource management. The organic health law (8080/90) reaffirms decentralization and regionalization as guiding principles for the processes of political-territorial organization [3].

It was during the early 2000s that regionalization gained prominence in the national health policy, with the edition of the Health Care Operational Standards (NOAS), highlighting concepts such as care module, micro and macro regions and instruments such as the Regionalization Master Plan (PDR) and Integrated Pactual Programming (PPI). The excessively normative character of these instruments, as well as their difficult implementation, has made it difficult to build regional solutions for local health problems [4].

In 2006, an alternative to democratize and to make feasible the construction of health regions was proposed: the Pact for Health. The intention was to reduce the excess of norms edited by the Ministry of Health. For this, the Collegiate of Regional Management was created, composed of managers of municipal and state spheres, with the responsibility of defining priorities and combining solutions for the attention network of regions [5].

Despite advances in simplifying the financing and democratization of managing bodies, the Pact has made little progress in reforming the care model and has maintained the so-called 'centers of reference'. This allowed maintaining competitions among municipalities, favoring larger ones with greater supply of services [5].

With the advent of Decree 7508/2011, the health region came to be conceptualized as:

*"... a continuous geographic space consisting of groupings of neighboring municipalities, bounded by cultural, economic and social identities sharing communication networks and transport infrastructure, in order to integrate the organization, planning and execution of actions and health services "[6].*

From these regions, networks of attention are structured, with increasing levels of complexity. To this end, the Decree provides for collaboration to be signed through the Public Action Organizational Contract (COAP), which should include indicators, goals and resources

required. New planning and management instruments are created, with a definition of the minimum list of services and the creation of territorialized health care networks. The search is for the clarity of the roles of the federated entities in the regions, mainly with the organization of health networks that are regionalized and accessible to the population [7].

When it comes to oral health, it is known that its insertion in the context of SUS occurred in a late and punctual manner at the end of the 2000s with the implementation of the Oral Health Teams in Primary Care. Specialized services with the Centers of Dental Specialties (CEOs), Regional Dental Prosthesis Laboratories (LRPD) and Tertiary Care were only set up in 2004 with the creation of the National Oral Health Policy - Brasil Sorridente [8].

Classified as services of medium complexity in oral health, the Centers of Dental Specialties (CEO), in the logic of regionalization, must be present in health regions, in proportion to the resident population, territorial characteristics and articulated the provision of basic procedures; forming a care network in oral health [9].

In this perspective, this article will describe the distribution of CEOs by health regions of Brazil and analyze how the health regions organize to offer the medium complexity in oral health with a focus on the identification of the federated entity responsible for the service management and the intermunicipal consortia as an alternative management arrangement for the provision of health services.

## Material and Methods

The Program for Improving Access and Quality of Centers of Dental Specialties (PMAQ / CEO) was established through Resolution 261 / GM / MS, of February 21, 2013, organized in four phases: adhesion and contractualisation; development; external evaluation and re- contractualisation.

External Evaluation consisted of an evaluative investigation in which the evaluator's position was external to the quantitative, observational and transversal intervention, performed in all Centers of Dental Specialties in Brazil accredited to the General Coordination of Oral Health - Ministry of Health (CGSB / MS) in the year 2014 and who agreed to participate in the survey, totaling 930 services. In addition to the observation of the service with a structured definition, the following were included as research subjects: managers (1), dentists (at least 1) and users (10) from each health unit.

The quantitative database of the external evaluation of the 1st cycle PMAQ-CEO was explored in its register and in the question addressed to the CEO's manager (module II-4.1) that seeks to identify the bond of CEO's professionals, more accurately about the agent contractor of dental surgeons (CD) inserted in the CEOs; to locate CEOs managed by consortium. These managers or the responsible CD, were interviewed in an individualized environment, allowing their free expression.

To obtain data on health regions in Brazil and by states, the database of the Interfederative Articulation Department of the Department of Strategic and Participatory Management of the Ministry of Health (DAI / SGEP / MS) was consulted.

## Ethical Aspects

All the ethical precepts recommended by Resolution CNS 416/2012 were followed, and the research was approved by the Ethics Research Committee of the Health Sciences Center - Federal University of Pernambuco under CAAE No. 23458213.0.0000.5208.

## Results

### Implementation of CEOs in the Perspective of Health Regionalization

Meeting the organizational principle of regionalization, Brazil had a total of 438 health regions in 2014: 45 in the Northern region (10.3%), 133 in the Northeastern region (30.4%), 153 in the Southeastern region (34.9%), 68 in the Southern region (15.5%) and 39 in the Mid-western region (8.9%), according to data in Table 1.

**Table 1. Characterization of health regions regarding the CEOs implementation.**

Region	State	Health Regions			Total CEO
		With CEO	Without CEO	Total	
Northern	Rondônia	4	3	7	7
	Acre	1	2	3	2
	Amazonas	5	4	9	11
	Roraima	1	1	2	1
	Pará	9	4	13	28
	Amapá	2	1	3	3
	Tocantins	7	1	8	7
	Total	29	16	45	59
Northeastern	Maranhão	13	6	19	26
	Piauí	9	2	11	28
	Ceará	22	0	22	79
	Rio Grande do Norte	8	0	8	23
	Paraíba	16	0	16	53
	Pernambuco	12	0	12	40
	Alagoas	10	0	10	22
	Sergipe	7	0	7	10
	Bahia	24	4	28	74
	Total	121	12	133	355
Mid-western	Mato Grosso Do Sul	4	0	4	15
	Mato Grosso	6	10	16	10
	Goiás	13	5	18	28
	Distrito Federal	1	0	1	9
	Total	24	15	39	62
Southeastern	Minas Gerais	46	31	77	83
	Espírito Santo	4	0	4	9
	Rio de Janeiro	9	0	9	66
	São Paulo	57	6	63	179
	Total	116	37	153	337
Southern	Santa Catarina	15	1	16	43
	Paraná	18	4	22	49
	Rio Grande do Sul	19	11	30	25
	Total	52	16	68	117
Brasil	Total	342	96	438	930

Of the 45 health regions in the Northern region, 64.4% (n = 29) had at least one Center of Dental Specialties, and the state of Tocantins presented the best situation: 7 of the 8 health regions presented CEO with one of its units composing the health care network.

Of the 133 health regions in the Northeastern region, 91% had at least one CEO (n = 121). When analyzing data of each federative unit that composes the Northeastern region, it was verified that only Maranhão, Piauí and Bahia do not have CEO implemented in all health regions.

With regard to the Southeastern region, 75.8% of health regions have CEOs in at least one of their municipalities (n = 116). Rio de Janeiro and Espírito Santo stand out as the states of this geographic region with CEOs in all their health regions.

When analyzing the Southern region, it was identified that 76.5% of health regions (n = 114) have CEOs in one of their municipalities. The best situation is found in Santa Catarina, where 14 of its 15 regions have CEOs implanted. In the Mid-western region, 61.5% of the health regions have CEOs implanted (n = 24), and the state of Mato Grosso do Sul is the only one that has CEOs in all its health regions. In a national perspective, of the 438 health regions that compose the Brazilian network, 78.1% (n = 342) have at least one CEO.

#### Management of CEOs Implemented in Brazil

The federal entity (Ministry of Health) does not do CEO management. At this governmental level, there are only university CEOs managed by Federal Universities (UF), specific cases of UF of Pará (2) and Santa Catarina.

With regard to CEOs under state management, which maintains funding with own resources and with the incentive passed on by the federal government, there is a still incipient presence (4.3% of the total Brazilian CEO). This situation points to the municipal character of Brazilian CEOs, consistent with the constitutional administrative principle of decentralization of health services.

In the five macro regions of Brazil, nine states have CEOs managed by state level, with none in the Southeastern region. Sixty percent of CEOs under state management are located in the Northeastern region, and within this region, the state of Ceará stands out with 75% of them, or 45% of state CEOs in Brazil. When observed if their installation takes place in the inner state or capital, 22.50% are found in capitals, being a characteristic of the Northern region.

**Table 1. State CEOs by State, Municipalities and Regions.**

Region	State	State CEOs	State CEOs in state capitals	State CEOs in other Municipalities	Total CEOs
Northern	Acre	1	1	00	2
	Pará	4	3	1 (Santarém)	28
	Amapá	2	2	00	3
	Total (Northern)	7	6	1	59
Northeastern	Ceará	18	00	18 (Acaráú, Baturité, Brejo Santo, Camocim, Canindé, Cascavel, Caucaia, Crateús, Crato, Itapipoca, Juazeiro do Norte, Limoeiro do Norte, Maracanaú, Russas, São Gonçalo do Amarante, Sobral, Tauá, Ubajara)	79

	Paraíba	1	1	00	53
	Sergipe	5	00	05 (Boquim, Laranjeiras, Propriá, São Cristóvão, Tobias Barreto)	10
	Total (Northeastern)	24	1	23	355
Southeastern	Total (Southeastern)	00	00	00	337
Southern	Paraná	7	00	7 (Cascavel, Colorado, Irati, Jacarezinho, Laranjeiras do Sul, Paranavaí and Toledo)	49
	Total (Southern)	7	0	7	117
Mid-western	Mato Grosso	1	1	00	10
	Goiás	1	1	00	28
	Total (Mid-western)	2	2	00	62
	Total (Brazil)	40	9	31	930

### Consortia as a Driving Force for CEO Regionalization

In Brazil, there are experiences of consortium-type management of services of medium complexity, since the 1970's of the last century. However, this institutional arrangement is still incipient for CEOs, since only 4.62% of Brazil's CEOs have adopted this managerial modality. This situation can be explained by the large number of small municipalities, with low tax collection, which leads to the impossibility of having their own CEO. Unfortunately, these municipalities do not routinely present association with other municipalities in the same region in order to organize the supply of specialized dental care among them.

It is possible to have consortia of public or private character, being that in this research 100% were public. There are municipal consortia in the classic form of division of attributions among different municipalities (53.49%), but also with state intervention (46.51%) present in the states of Ceará (75%) and Paraná (25%). No consortia were found in the Northern and Mid-western regions. They are present in a total of 8 states of the federation. The state of Piauí stands out with 42.86% of its CEO under this management model, and Ceará with 18.99%.

**Table 2. CEO under the management of state or municipal public consortia.**

Region	State	Total CEOs	State CEO in Consortium	Municipal CEO in Consortium	Main Municipalities with CEO in Consortium
Northern	Total (Northern)	59	00	00	
	Ceará	79	15	00	Baturité, Brejo Santo, Canindé, Cascavel, Caucaia, Crateús, Crato, Itapipoca, Juazeiro do Norte, Limoeiro do Norte, Maracanaú, Russas, São Gonçalo do Amarante, Sobral, Tauá
Northeastern	Maranhão	26	00	1	Pedreiras
	Piauí	28	00	12	Barras, Bom Jesus, Campo Maior, Corrente, Floriano, José de Freitas, Luzilândia, Miguel Alves, Piracuruca, Piripiri, Teresina and União
	Total (Northeastern)	355	15	13	
Southeastern	Minas Gerais	83	00	2	Itabira and São Lourenço
	Rio de Janeiro	66	00	1	Porciúncula
	São Paulo	179	00	1	Lindóia
	Total (Southeastern)	337	00	4	

Southern	Paraná	49	5	5	Jacarezinho, Laranjeiras do Sul (2), Paranavaí e Toledo- Apucarana (2), Cianorte, Pato Branco and Umuarama
	Rio Grande do Sul	25	00	1	Ijuí
	Total (Southern)	117	5	6	
	Total (Mid-western)	62	00	00	
	Total (Brazil)	930	20	23	

It was observed that of the 40 CEOs under state management, half are under the management model in the form of consortia between state and municipalities; highlighting Ceará with 15 and Paraná with the other 5.

## Discussion

Based on international experiences, in countries such as England, Italy, Germany and Canada, it is recommended that decentralization of health policy be linked to regionalization through the organization of service networks associated with the creation and strengthening of regional health authorities [10].

With regard to the medium complexity oral health, there has been a rapid expansion of the number of Centers of Dental Specialties in Brazil since their implementation in 2004, reaching a total of 930 units in 854 municipalities in 342 health regions.

A study that has analyzed the distribution of CEOs in the health regions of Brazil, found that only six states presented 100% of their regions with CEOs: Alagoas, Ceará, Mato Grosso do Sul, Rio Grande do Norte and Roraima, in the year of 2011. In 2014, nine states presented CEOs in all health regions: Alagoas, Ceará, Mato Grosso do Sul, Rio Grande do Norte, Paraíba, Pernambuco, Sergipe, Federal District and Rio de Janeiro [11].

The state of Ceará, with a mature decentralization process since the 1980s and its Regionalization Master Plan, has been highlighted, describing the offer of specialized oral health actions since 2007, when the "State Policy of Oral Health Guidelines 2007-2010" document was elaborated and published [11].

The decentralization and regionalization of health actions and services in Brazil are structuring guidelines in the Unified Health System (SUS). The importance of regionalized and integrated health care networks is emphasized since they offer a more adequate condition for the fulfillment of the integrality of care and reduce the costs of services by providing systemic rationality in the use of resources [12]. Hence the importance of implanting CEO in Health Regions that still do not have it, that is, 21.91% of regions.

However, another aspect that needs to be taken into account, apart from the implementation of these services, is their relationship with the other levels of the care network attention. A horizontal relationship with a high degree of interdependence is necessary, adopting as principle a system in user-centered networks. The distribution of these points in health regions must meet criteria of scale economies, scope and accessibility.

The State of Santa Catarina presents the best situation among the southern states regarding the distribution of CEOs by Health Regions, where only one Region does not have this type of service; however, it is noteworthy that these are concentrated in the Health Region of the metropolitan region of Florianópolis, which brings together a large number of specialized services, with higher technological density, both for diagnosis and for dental treatment, in comparison to other state regions. In addition, the oral health network in Santa Catarina is not organized in order to attend mainly people from the metropolitan region of Florianópolis due to the absence or limitation of services in neighboring and smaller cities.

The resolution of difficulties triggered by the decentralization process, especially as regards the capacity of municipalities to provide health care, including oral health care, as a whole, in a resolute manner and capable of adequately meeting social demands, involves the formation of integrated and regionalized service networks. These networks must be accompanied by institutionalized planning, programming and regulation devices, ensuring, in a more rational way, the population's access to all levels of attention [13]. Based on this assumption, the Brazilian government proposed the (re) structuring of the health system, in the perspective of the Care Network, as a strategy to overcome the fragmented way of operating attention and management in the different Health Regions [14].

One condition to bring oral health care to a new level of care and assistance lies in the implementation of a regionalized health care network. However, it is important to note that the insertion of oral health care in the regionalized health care network is still in an early stage, still considered incipient, sometimes not linked to the care network, which is also yet to be consolidated [8].

A study carried out in Bahia investigated the decentralization of the management of oral health services and concluded that this process has not been accompanied by a deliberate and broad effort to improve the administrative capacity and management of services, despite the increased availability of financial resources to the sector [15].

In order to overcome health care gaps, in particular the CEOs, it is necessary to overcome a number of challenges, including the constitution of the "interfederativa health network" as a way to strengthen links among public entities through contracts or other legal instruments that establish responsibilities, reinforcing institutionality in regional planning. The commitment of the three government spheres is of utmost importance for the consolidation of the health regionalization in SUS, for which it is necessary to strengthen the existing political-institutional mechanisms [16].

Studies that evaluate regional integration have shown that progress has been made, starting from the Pact for Health, mainly in the formal aspects, such as revision and adaptation of the geographical limits of regionalization, constitution of the regional collegiate, programming of the offer of services, among others. Nevertheless, more substantive changes that would develop regional integration resulting from agreements among managers were little observed [17].



The fact that more than 95% of CEOs in Brazil are under municipal management is in agreement with the health policy decentralization, which is consistent with the Brazilian federative design, focusing on the transfer of decision-making power, management responsibilities and financial resources from the Union to the states and, above all, to municipalities [18].

This trend towards the concentration of CEOs in municipalities of medium or large population is probably due to the greater capacity of application of financial resources collected by the municipality itself and the greater availability of specialist professionals. It is known that in the structuring of the health care network, there is a recommendation that services with higher technological density should be concentrated (such as CEOs), while those with lower technological density should be dispersed (such as Oral Health Care Teams in the Basic Attention) [19].

The consortium is an important instrument for the SUS consolidation, especially regarding the hierarchy and regionalization of health care. Considering that 81% of Brazilian municipalities have less than 30 thousand inhabitants, that is, they are small, and that only 26% of CEOs are located in these municipalities, an institutional arrangement that would adopt the managerial mode of consortium could be an important instrument for the expansion of new services. In the health area, this arrangement has been used to solve problems of different natures, either to manage specialized health units, purchase of medicines and basic medical-hospital supplies, among others [20].

## Conclusion

There was a rapid expansion of the Centers of Dental Specialties after ten years of their implementation, demonstrating a healthy capillarization and a great capacity for the implementation of Health Policies.

It was not possible to observe if the health regions plan the offering of medium complexity oral health within a regional perspective, that is, if there is shared care with neighboring municipalities or if the CEO only provides assistance to the population resident in the municipality that it was implemented, or in which regions, CEOs offer sufficient provision of medium complexity procedures, or if they act in network with primary care.

The incipient offer of medium complexity oral health via CEO by the consortium-type management model was verified. The exclusivity of the public model among the few initiatives of consortium-type CEO management is emphasized, which points to a possible tendency of this modality to be administered within the apparatus of the State.

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