

**Specialized Dental Care Supply in the Primary Care in Brazil, the Brazilian Northeast, and the State of Paraíba****Oferta da assistência odontológica especializada na Atenção Básica do Brasil, Nordeste e Paraíba****Oferta de asistencia odontológica especializada en la Atención Primaria de Brasil, Noreste y Paraíba****Received: 25/04/2016****Approved: 14/10/2016****Published: 15/02/2017****Nayara Pereira Limão<sup>1</sup>**  
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This study aims to analyze the existence of Odontological Specialty Centers (OSC), the distribution of specialties, and the waiting time in Brazil, in the Brazilian Northeast and in the State of Paraíba, in the perception of primary care professionals. The data used were from the 1st External Evaluation Cycle of the Program for the Improvement of the Access and Quality of Primary Health Care, and they were analyzed descriptively. The Paraíba state presented the highest percentage of OSCs referred to by professionals when compared to Brazil and to the Northeastern region. Endodontics is the most common specialty in all these spheres. The longest waiting time is for Orthodontics, in Brazil, and for Prosthodontics in the Northeast and Paraíba.

**Descriptors:** Oral health; Dentistry; Specialties dental.

Este estudo teve como objetivo analisar a existência de Centros de Especialidades Odontológicas (CEO), a distribuição das especialidades e o tempo de espera no Brasil, na região Nordeste e no estado da Paraíba, a partir da percepção dos profissionais da atenção básica. Foram utilizados e analisados descritivamente dados do 1º ciclo da Avaliação Externa do Programa Nacional de Melhoria do Acesso e da Qualidade da Atenção Básica. A Paraíba apresentou maior percentual de existência de CEOs de referência para as equipes, quando comparada ao Brasil e ao Nordeste. A Endodontia é a especialidade mais frequente nas três esferas e o maior tempo de espera para atendimento é para a Ortodontia no Brasil e Implantodontia no Nordeste e Paraíba.

**Descritores:** Saúde bucal; Odontologia; Especialidades odontológicas.

Este estudio tuvo como objetivo analizar la existencia de Centros de Especialidades Odontológicas (CEO), la distribución de las especialidades y el tiempo de espera en Brasil, en la región Noreste y en el estado de Paraíba, a partir de la percepción de los profesionales de atención básica. Fueron utilizados datos del 1er ciclo de la Evaluación Externa del Programa Nacional de Mejoría del Acceso y de la Calidad de Atención Básica y siendo ellos analizados descriptivamente. Paraíba se presentó con mayor porcentaje de existencia de CEO de referencia para los equipos cuando fue comparada con Brasil y el noreste. La Endodoncia es la especialidad más frecuente en las tres esferas y el mayor tiempo de espera para el cuidado es para la ortodoncia en Brasil y la implantología en el Noreste y Paraíba.

**Descritores:** Salud bucal; Odontología; Especialidades odontológicas.

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## INTRODUCTION

In Brazil, there has been an evident and progressive investment in actions which consider the expansion of the access to health services. The Family Health Strategy (FHS), together with other programs such as the "Brasil Sorridente" ("Smiling Brazil"), has been generating important advances for the setting of a new oral health model.<sup>1,2</sup>

Beyond the growth of primary care, there has also been an expressive financial investment to an increase in the number of procedures in the secondary and tertiary levels of oral health assistance. Reference and counter-reference services have constituted the secondary care, through the implantation of Odontological Specialty Centers (OSCs)<sup>3</sup>.

The OSCs have been created in Brazil to, among other aspects; guarantee an integral access to oral health actions. In addition, they strengthen the proposal to create a solid assistance network, in order to generate specialized odontological services, that is, medium complexity ones. These health services are destined to offer the users of the Unified Health System (SUS) oral diagnoses (especially the detection of mouth cancer), periodontics, minor oral soft and hard tissue surgeries, endodontics, and care for patients with special needs<sup>4,5</sup>.

Specialized odontological care, as any other health service, must be evaluated with the objective to verify/detect problems and generate uninterrupted improvement in the quality of the services<sup>6</sup>. In this context, the "Health Closer to You - Access and Quality/National Program for the Improvement of the Access and Quality of Primary Health Care - PMAQ-AB" was created by the Ministry of Health, aiming at implementing national, regional and local standards<sup>7</sup>.

The PMAQ-AB included the initial contracting of the teams, followed by actions to develop the services through self-assessment, institutional support, permanent education and monitoring. After this, external evaluations would be conducted, and the workers - if approved - would be certified and definitely contracted. The evaluation process of the services comes into effect in the third

phase (External Evaluation) of the PMAQ-AB. It comprises three instruments: Module I: Observations in the Primary Health Care Unit; Module II: Interview with a Professional from the Primary Care Team and Analysis of the Documents in the Basic Health Care Unit; Module III: Interview with users<sup>7</sup>.

The Smiling Brazil program has increased its technical and political visibility due to its initiative to amplify and qualify the offer of specialized odontological services, which promoted and expanded the OSCs<sup>8</sup>. Since then, there has been a fast growth in the number of CEOs, making evaluations necessary to overview these services, to seek for a better way to solve the difficulties found.

An analysis of the Specialty Odontological Centers is essential in a national, regional, and statewide level, as does the knowledge regarding the behavior of these services, when it comes to the demand to the specialties and the waiting time for the users. The relevance of these questions is due to the fact that these data can generate a better access and quality to this service, beyond promoting a verification of the actualization of integral health care.

That being said, this study aimed at analyzing, from the viewpoint of the professionals who work in the teams of primary health care, and through the use of information from the 1st External Evaluation Cycle of the PMAQ-AB, the existence of Odontological Specialty Centers which are referenced for the Family Health Teams in Brazil, the Brazilian Northeast, and the state of Paraíba, as well as the way in which the specialties are distributed, and the waiting time for users of these services.

## METHOD

This study used secondary data, generated by the Ministry of Health, from the 1st Cycle of External Evaluations of the PMA-AB, acquired from the responses of the then contracted Health Teams.

These data were taken from the instrument "External Evaluation: Health Closer to You." The external evaluation step was developed by researches/professors from Universities and Brazilian Teaching and

Research Institutions. It is a quantitative and cross-sectional research, conducted through inductive reasoning. Data collection was conducted in 17.202 Brazilian Primary Health Care Units ("UBS" in the Brazilian Portuguese acronym), between 2012 and the beginning of 2013, being that 5.559 were in the Northeast and 625 in the State of Paraíba.

The external evaluation instrument used by the program had four modules, and each of them had different information, according to the different aspects to be evaluated in the Primary Health Care Teams. This study used the information acquired by Module II - An Interview with the Professional of the Primary Health Care Team and a Verification of Documents in the Primary Health Care Unit.

In order to select a professional from the team to be interviewed, the interviewer, who were part of the "Health Closer to You" team, would contact that professional

beforehand. In addition, the interviewee should be the person who could offer the highest amount of information regarding the work process of the whole team, and should be chosen by the team itself before the moment of evaluation. In the questions which required the verification of documents, the participant had to present the documents with data confirming their answers<sup>7</sup>.

Variables of interest were selected for this study from data banks containing the results of the PMAQ-AB for Brazil, the Northeast region, and Paraíba. The variables used (Table 1) were related to the group of questions "Oral health: reference for odontological specialties".

Data were analyzed descriptively, through absolute and percentile frequencies, producing a comparative analysis for data in Brazil, the Northeast region, and Paraíba. The software SPSS, version 21.0, was used for analysis.

**Table 1** - Variables analyzed through information obtained in the section "Oral health: reference for odontological specialties". PMAQ-AB, 2013.

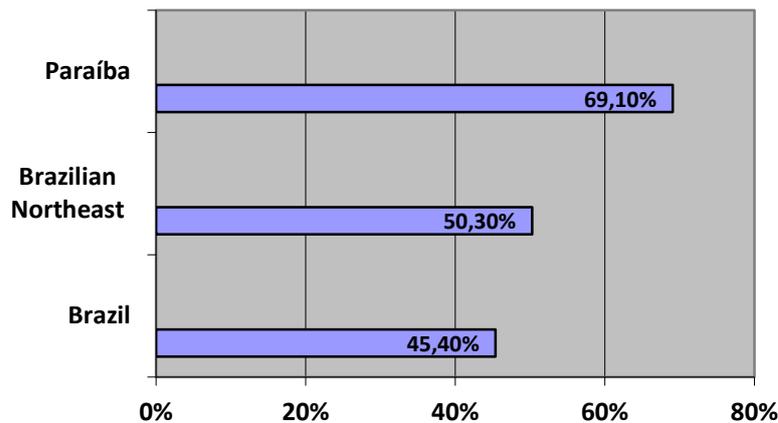
Question/Variable analyzed	Response of the health professional	Analysis category
II. 37.1 - Is there an Odontological Specialty Center (OSC) to which patients are referred to by your team?	1 - Yes 2 - No	1 - Yes 2 - No
II. 37.2- The city has these references for which specialties?	Endodontics; Periodontic oral and maxillofacial surgery (minor oral surgery); Oral medicine; Orthodontics; Prosthodontics; Oral and maxillofacial radiology; Other	1 - Yes 2 - No
II. 37.(10-17) After requested by the primary health professional, how long on average does the user have to wait to receive care from the following specialties:	Time in days for specialties: Endodontics; Periodontics; Oral and maxillofacial surgery (minor oral surgery); Oral medicine; Orthodontics; Prosthodontics; Oral and maxillofacial radiology; Care for people with disabilities.	- Average of days waiting for each specialty - Standard Deviation (Days)

**RESULTS**

According to the answers obtained from the interview with the professionals from the health teams, it was noticed that, when asked

if there was an OSC their team referred patients to, 69.1% responded "YES" in Paraíba, 50.3% in the Northeast, and 45.4% in Brazil as a whole (Graphic 1).

**Graphic 1.** Distribution of the presence if Odontological Specialty Centers (OSCs) referred to by professionals in the primary care teams in Brazil (n=17.202), the Brazilian Northeast (n=5.559) and the Paraíba State (n=625). PMAQ-AB, 2013.



The Table 1 shows the distribution of frequencies in the specialties found in the OSC the teams refer to, according to the answers of the professionals interviewed. It can be noted

that the most frequent specialties are Endodontics, Periodontics and Minor Oral Surgery, and the least frequent is prosthodontics.

**Table 1.** Absolute and relative distribution of the specialties found in the OSCs referred to, according to the health professionals of the teams. Brazil (n=17.202), Northeast (n=5.559) and Paraíba (n=625). PMAQ-AB, 2013.

Specialty	Brazil		Northeast		Paraíba	
	n	f	n	f	n	f
Endodontics	8565	49.8	3068	55.2	451	72.2
Periodontics	7889	45.9	2811	50.6	411	65.8
Minor Oral Surgery	8239	47.9	2888	52.0	436	69.8
Oral medicine	5046	29.3	1528	27.5	192	30.7
Orthodontics	258	15.1	906	16.3	61	9.8
Prosthodontics	787	4.6	177	3.2	12	1.9
Radiology	5877	34.2	2221	40.0	312	49.9
Other	2584	15.0	909	16.4	106	17.0

Source: Ministry of Health, PMAQ-AB 1<sup>st</sup> External Evaluation Cycle (2013)

In Table 2 the average and standard deviation of the waiting time of the user can be seen, in days, depending on the respective

specialty offered by the OSCs, according to the answers of the health professionals interviewed by the external evaluation team of the PMAQ-AB.

**Table 2.** Average and Standard deviation (SD) of the waiting time (days) of the user in the OSCs, according to specialty - Brazil (n=17.202), the Northeast (n=5.559) and Paraíba (n=625).

Specialties	Brazil		Northeast		Paraíba	
	<i>Average</i>	<i>SD</i>	<i>Average</i>	<i>SD</i>	<i>Average</i>	<i>SD</i>
			<i>Days</i>			
Endodontics	91.50	123.48	53.65	78.53	53.81	75.80
Periodontics	45.39	65.60	26.84	43.56	21.51	28.11
Minor Oral Surgery	46.55	73.39	28.49	48.15	24.42	31.67
Oral medicine	32.91	56.43	33.43	70.20	19.30	33.57
Orthodontics	94.34	127.79	94.72	139.55	62.18	120.61
Prosthodontics	93.36	112.78	132.20	151.58	108.48	167.38
Radiology	11.95	34.12	11.84	41.79	6.00	20.03
Care for patients with disabilities	27.44	48.61	22.75	47.72	16.65	29.50

Fonte: Ministry of Health, PMAQ-AB 1st Cycle of External Evaluation (2013)

## DISCUSSION

In this research, aspects relevant to the evaluation process were sought after from data of the 1st cycle, to contribute to a debate necessary for the improvement of the situation of oral health in the health care network. In addition, the study tried to point out aspects which can give support to a reorientation of the PMAQ-AB and of health care on a national level. Also, the evaluation of secondary attention was only brought to effect after the Program of Improvement of Access and Quality of the Odontological Specialty Centers (PMAQ-CEO), instituted through the Decree GM nº 261, 02/21/13, whose data were not yet divulged when this article was concluded<sup>9</sup>.

It is common knowledge that, ever since the introduction of the OSCs, there has been an expansion of secondary care oral health services throughout Brazil. In this study, it was noticed that the relative frequency of OSCs in the Northeastern region surpasses that of the country as a whole. Literature shows that, since Brazil is a heterogeneous country in many aspects - especially when it comes to the specificity of each region -, there is a greater concentration of these centers in the regions Northeast and Southeast, probably due to being populous regions, with high primary care coverage<sup>10,11</sup>.

Corroborating the data found in this study, Saliba *et al.*<sup>11</sup> showed that, though the Northeast region presents negative social indicators, it is also contemplated with a higher percentile of cities covered by the OSCs. As for the indicators, it is worth

mentioning the epidemiological data contained in the Brazil Oral Health (OH) 2010, where the Northeast region is shown to present the highest average number of cavities in 12 year old children and in adolescents from 15 to 19 years of age. In addition, in the Northeast, the necessity of treatments for tooth decay is bigger, suggesting that, as a whole, this region presented the highest number of people who needed oral treatments such as restorations, pulp treatments or extractions<sup>12</sup>.

When compared to Brazil or to the Northeastern region as a whole, Paraíba presented the highest percentile of OSCs referred to by the teams. This might be connected to the evolution of oral health services in this state, which aim at minimizing a lack in the Oral Health field, since the high prevalence of tooth decay is outlined by the heterogeneity of Brazilian regions. Another aspect which can be related to thus findings, is that the Brazilian Northeast as a whole was a basis for the development of the National Oral Health Policies, and therefore, were pioneer in the introduction of health policies<sup>11</sup>. Also, this can be due to the fact that Paraíba has presented, for several years, a high population covered by Family Health teams, as indicated by Pereira *et al.*<sup>13</sup>.

When questioned about which specialties the city they worked in offered in its OSCs, Endodontics was the most commonly referred to by health professionals, followed by minor oral surgeries and periodontics. The same findings were achieved in a study about the services demanded from the OSCs by the

patients, proposed by Saliba *et al.*<sup>11</sup> This study reports that the majority of the demand (50.4%) was destined to endodontic treatments. This can be related to the evidence presented in the epidemiological data of the OH Brazil 2010, where pulp treatment was one of the most frequent treatment needs, justifying its high demand, as well as the importance of the offer of these services in secondary attention<sup>12</sup>.

From the specialties offered at the OSCs, Endodontics is the one which aims at treating and preventing pulp a periapical disease. This kind of care is characterized as emergency in its nature to the pain - which warns one of the gravity of the situation, and gives an incentive to look for care. Thus, the "emergency" factor generates the beginning of a new cycle of care, which interferes in the schedule already established in these centers for the other, non-emergency cases. This can corroborate the demand overload regarding this service<sup>14</sup>.

Lino *et al.*<sup>15</sup>, when evaluating the secondary attention in the state of Minas Gerais, identified different results from those found in this study, as they found that most procedures conducted were Surgeries (55.0%), followed by Periodontics (28.2%) and Endodontics (16.8%). That study found, as a justification for such a low number of endodontic procedures, the incorporation of rotating instruments, to make the treatments faster and, consequently, manage to perform a higher number of them. The situation of the specialties Endodontics and Periodontics in that state was found to be "worrying", as a high number of cities presented a number of procedures equal to zero.

Radiology and Oral medicine were also frequently mentioned by the health professionals during the interviews of the PMAQ-AB external evaluation. The offer of these specialties in the secondary level is essential to guarantee an integral care, as they support the diagnosis of the conditions of the oral cavity, with an emphasis on the detection of mouth cancer<sup>4</sup>.

Also emphasizing oral diagnosis, the National Policy for the Prevention and Control of Cancer was instituted in the scope of the

Unified Health System (SUS), in 2013, aiming at subsidizing precocious detection and reduction of cancer cases, as well as controlling physical, chemical and biological risk factors, among other things<sup>16</sup>. This is a particularly important fact when it is considered that, according to the National Institute of Cancer (INCA), it is estimated that, in 2016, there will be 11.140 new cases of oral cavity cancer in men, and 4.350 in women. Therefore, it is worth noting that, according to estimates, mouth cancer is the fifth most common cancer among males, and the eleventh for females, not considering non-melanoma skin tumors<sup>17</sup>.

Orthodontics and prosthodontics were the least present specialties in the CEOs, according to the answers of the health professionals. In 2010, the Ministry of Health, through the Ministerial Decree N<sup>o</sup> 718/SAS, established procedures in the scope of these specialties in the OSCs<sup>18</sup>. It became necessary to incorporate these procedures in order to change the epidemiological framework, where tooth decay was declining, and there was an expressive prevalence of malocclusion, including the loss of one or more dental elements, which generated consequences. However, this study points out that, considering the report of professionals who work in primary care, the offer of these specialties in secondary health, whether nationally, regionally, or locally, is still incipient. This is an important finding, as health systems which have as one of their foundations the primary care, must guarantee the fluidity of the path to and between diagnosis and adequate therapeutic actions, so that specialized care can solve the problem in due time<sup>19</sup>.

The difficulty to access specialized services is indicated, in many studies, as something the users complain about<sup>20-24</sup>. The lack of professional in specialized services also generates a higher waiting time, which is a reason that leads many users of the SUS to feel dissatisfied<sup>25</sup>. Santiago *et al.*<sup>21</sup> found in their study a high dissatisfaction with the waiting time relative to the day of scheduling of specialized consultations. They considered it to be a serious problem, as the

dissatisfaction is directed at one of the main objectives of the Family Health Strategy (FHS): to be the gateway for a network of universally accessible and resolute services.

Regarding the odontological specialties, this study found, in Brazil, the Northeast, and Paraíba, that the highest waiting times were for the specialties Orthodontics, Prosthodontics and Endodontics, respectively. The Northeastern region and the State of Paraíba were found to be in a different situation from that of the country as a whole, since Prosthodontics presented a higher average of waiting time, followed by Orthodontics and Endodontics.

The fact that Prosthodontics and Orthodontics have a longer waiting line can be connected to the low offer of these services, when compared to the other OSC specialties. Endodontics presented a relevant waiting time on national, regional and local scope. This might be associated to the high demand of endodontic procedures, as they result from non-intervention in the first stages of the cavity<sup>26,27</sup>. Another problem one can infer is the excess of references, which can be the result of the inadequate specialized attention.

Therefore, several studies have shown that there is a great demand for Endodontics, which contributes for the longer waiting times in this specialty<sup>15,28</sup>. This fact would be a detriment, as it could result in users giving up conservative treatments, and possibly looking for dental extraction as a solution<sup>29</sup>.

According to Gouveia et al<sup>30</sup>, the waiting time was one of the reasons the users of public health were dissatisfied in Brazil. The elevated waiting time for specialized services can be related to several factors, among which are: a lack of structure, of professionals, excessive demand and problems in the organization of the services<sup>31</sup>. The waiting time in some cities varied from days to months<sup>11</sup>.

The smallest waiting time was for the specialty Radiology, in Brazil, the Northeast or Paraíba. This is in accordance to a study conducted by Dalri<sup>32</sup>, in the city of Florianópolis/SC, which points out that the smallest waiting time was for Radiology (57 days).

It is important to highlight that a large waiting time between the scheduling of a secondary level consultation by a primary health care user and the consultation itself, might be a reason for the user not to attend these consultations. Some studies<sup>32,33</sup> state that the longer the user waits, the more likely it is that they will not be at a scheduled consultation - most of them mentioning "forgetfulness" as a one of the main factors associated with these absences<sup>34</sup>.

It is also believed that the long waiting times might be related to a high demand, which would be being caused by problems in the organization of health practices in primary care. Furthermore, to better structure and organize the health care network, interactions and articulations among the different levels of care, are necessary, and their flaws might be attributed to a lack of planning and organization of the managers, who should guarantee the nonstop access to actions, diagnosis and therapy<sup>35,36</sup>. Thus, with a resolute primary care, it would be possible to see an improvement in the services, with positive results for the whole network.

This study was limited, especially, by its use of secondary data, which can lead to imprecision's due to issues in the filling of the information. There were, however, no expressive losses. Also, as this is an analysis regarding the 1st External Evaluation Cycle of the PMAQ-AB, the number of teams in the program was still small.

## CONCLUSION

The results described in this study cover the existence of Odontological Specialty Centers, according to the answers of health professionals from the Primary Health Care Teams, as well as the waiting time theses Centers had for different specialties.

Centers for secondary care in oral health were found to be more present in the State of Paraíba than in Brazil or the Northeastern region as a whole. Among the specialties offered by the OSCs, Endodontics was the most commonly found, and the waiting time for the users is higher for

Orthodontics in Brazil, and for Prosthodontics in the Northeast and in Paraíba.

The OSCs have shown to be an effective way to offer specialized service, consolidating a better oral health care in the country. However, these services still need to be expanded, especially in the specialties of Endodontics, Prosthodontics and Orthodontics, as to diminish the waiting time and guarantee an integral oral health care.

Furthermore, it is important to highlight the necessity of planning and organizing the oral health care networks, starting at primary care, with the objective of amplifying the access and the quality of the offered services.

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#### CONTRIBUTIONS

All authors contributed equally to the design, writing, and critical review of the study.

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