



# Specialized dental care for people with disabilities in Brazil: profile of the Dental Specialty Centers, 2014\*

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## Abstract

**Objective:** To describe the oral health care services for people with disabilities treated within the Dentistry for Patients with Special Needs (PSN) specialty. **Methods:** This was a cross-sectional study with data from the Program for Improving Access and Quality of Dental Specialty Centers (PMAQ-CEO) in 2014. **Results:** Of the total of 932 services evaluated, 89.8% did provide care for PSNs, 30.4% had physical accessibility, 59.7% provided referral to hospital care and most guaranteed complete treatment. Only a third of the Dental Specialty Centers planned 40 or more hours a week for providing clinical care to PSNs. **Conclusion:** The care network for people with disabilities is being formed but, even with specific financial incentives, it has limitations. Services need to eliminate physical and attitudinal barriers to ensure universal accessibility. Protocols based on risk classification are necessary, prioritizing care at DSCs for complex cases not attended to in Primary Care and organizing the dental health care network for people with disabilities.

**Keywords:** Disabled Persons; Dental Care; Health Services; Health Evaluation; Cross-Sectional Studies.

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## Introduction

Even though the law guarantees their right to health as a priority, people with disabilities suffer health inequities.<sup>1</sup> Poorer overall health<sup>1</sup> and oral health status,<sup>2</sup> and difficulty in finding health professionals available to provide care,<sup>3</sup> together with poorer living conditions,<sup>4</sup> mean that oral health of people with disabilities should be considered to be a priority among health actions. Financial issues appear as one of the main barriers to access faced by people with disabilities.<sup>5</sup> This points to the need to enhance public health services in Brazil in terms of facilitating access by this population.

A person with a disability is someone who has a long-term physical, mental, intellectual or sensory impediment and, when interacting with so many barriers, whose full and effective participation in society on an equal basis with the general population can be hindered. Brazil follows the guidelines of the World Health Organization (WHO) when assessing disability medically and socially, taking into account impediments related to functions and those present in body structures, socio-environmental, psychological and personal factors, limitations in performing activities and participation restrictions.<sup>6</sup>

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The Brazilian Care Network for People with Disabilities was set up in 2012, following the creation of the so-called Dental Specialty Centers (DSC) in the public health network, with the purpose of contributing to improved health status of these citizens.<sup>7</sup> By means of a specific financial incentive, intended for comprehensive care of people with disabilities<sup>8</sup> and training of public health dentists and dental auxiliaries,<sup>9</sup> the aim was to expand care and reduce difficulties faced by people with disabilities in accessing dental services.

Health services should be organized in the form of a network, defined by increasing levels of care and complexity.<sup>10</sup> The DSCs, as Public Health care services, are included in the National Health Establishment Registry and qualified as Specialized Clinics or Specialty Outpatient Departments. Care provision to patients with special needs, including people with disabilities, is one of the specialties required in order for a DSC to gain accreditation.<sup>11</sup> It should be emphasized that a DSC is not a center of specialists but rather a center of specialties, which is why it is not obligatory for health workers to be qualified as specialists in order to work there.

In view of the scarcity of studies in Brazil on specialized care,<sup>12,13</sup> as well as the absence of research interested in the design of the oral health network for people with disabilities, a need for more studies on this theme can be seen. The objective of this article was to describe the specialized oral health care services for people with disabilities treated within the Dentistry for Patients with Special Needs (PSN) specialty.

## Methods

This is a descriptive study using data from the 1<sup>st</sup> Cycle of the Program for Improving Access and Quality of Dental Specialty Centers (PMAQ-CEO), the objective of which was to encourage access and improved quality of the DSC.<sup>14</sup> The study was conducted throughout Brazil in all its five macro-regions, including services located in the state capitals and also in interior regions. Data collection took place in the first semester of 2014, by means of a standardized and tested questionnaire using portable tablet type computers.

The information relating to the DSCs was collected by means of two interviews, with two health professionals from each service, one of whom was the manager responsible for the DSC or the health professional who knew most about the DSC work process, while the other was a dental surgeon, regardless of specialty, who was at the DSC when the interviewers visited it; the same person could not be the respondent for both interviews.

All the variables used were collected during the PMAQ-CEO external evaluation. The information of interest in Module I of the evaluation (DSC Observation) related to service structure, while the information of interest in Module II (Interview with DSC manager

and dental surgeon) related to work process, service organization and care of service users.

With the aim of preventing information and measurement bias, all interviewers used the same data collection questionnaire and were accompanied by a field supervisor. All interviewers underwent a two-day training (16 hours), organized and conducted by the steering group responsible for coordinating the external evaluation, so that they could become familiar with all the questions on the instrument, as well as the itinerary to be followed by the interviewers.<sup>15</sup> The electronic questionnaire was also programmed to critically monitor answers so as to avoid typing errors.

DSCs accredited by the Ministry of Health in 2013 (when they adhered to the PMAQ-CEO) were visited by the external evaluator, forming a census of all these services in Brazil. DSCs were excluded if they were closed, being renovated, had lost their Ministry of Health accreditation or refused to take part in the external evaluation stage.

The following variables were used in the study:

- a) macro-region (North; Northeast; Midwest; Southeast; South);
- b) DSC classification (I; II and III);
- c) number of dental surgeons (DS) working in the PSN specialty (DSs-PSN per DSC: 0; 1; 2; 3 or more);
- d) availability of clinical care for the PSN specialty (in hours a week: 0; <20; 20-39; 40 or more);
- e) adapted corridors (yes; no);
- f) adapted doors (yes; no);
- g) wheelchair (yes; no);
- h) ramp with handrail (yes; no);
- i) physical accessibility (no facilitation; some facilitation; complete facilitation);
- j) PSN referral quotas (yes; no);
- k) DSC receives primary healthcare center (PHC) referrals (yes; no);
- l) existence of PHC-DSC referral protocol (yes; no);
- m) hospital referral for care under general anesthesia (yes; no);
- n) hospital care vacancy organization (quota system; number not limited; other; N/A);
- o) unmet demand for hospital care (yes; no; unable to answer; hospital care not provided);
- p) average monthly hospital care (1-4; 5-8; more than 8; hospital care not provided);
- q) PSN care waiting time (up to one week; between 8 and 15 days; more than 15 days; unable to answer/did not answer);

- r) complete PSN treatment guaranteed (yes; no);
- s) service user profile
  - behavior disorders (yes; no);
  - sensory or physical disability without behavior disorder (yes; no);
  - involuntary movement (yes; no);
  - diabetic, heart disease and elderly patients (yes; no);
  - autistic patients (yes; no);
  - HIV-positive (yes; no); and
  - pregnant women and babies without disabilities (yes; no).

With regard to DSC classification, the criterion adopted by the Ministry of Health was used,<sup>11</sup> according to which (i) Type I has 3 or more DS and 1 dental auxiliary (DA) per dental clinic, (ii) Type II has 4 or more DS and 1 DA per dental clinic, and (iii) Type III, has 7 or more DS and 1 DA per dental clinic.

The data were tabulated and analyzed using SPSS version 18.0. The quantitative variables were described either as averages and respective standard deviations or as medians and percentiles, while the categorical variables were described according to absolute and relative frequency.

The PMAQ-CEO external evaluation obeyed the requirements of the Declaration of Helsinki and was approved by the Federal University of Pernambuco Health Sciences Center Research Ethics Committee (CEP/CCS/UFPE): Record No. 740.974 and Certificate of Submission for Ethical Appraisal (CAAE) No. 23458213.0.0000.5208, on August 6<sup>th</sup> 2014. Before being interviewed, all individuals who agreed to take part in the study signed a Free and Informed Consent form.

## Results

All 984 DSCs accredited in 2013 were visited by the external evaluator. Fifty-two (5.3%) DSCs were excluded from the study in accordance with the criteria mentioned above, resulting in 932 Centers taking part in this study.

The DSCs were not uniformly distributed throughout Brazil. These services were found to be concentrated in the Northeast (38.3%) and Southeast (36.2%) regions, while the North and Midwest regions accounted for around 6% each, and the Southern region accounted for 12.4% of the country's DSCs (Table 1). Despite provision of care to PSNs by DSCs being intended to be obligatory,

89.8% of these services had dental surgeons qualified as PSN specialists and only 33.8% of the DSCs planned 40 or more hours a week for providing clinical care to these patients (Table 1). Among the services that did not offer this specialized service (10.2%), 51.6% were located in the Northeast, 27.4% in the Southeast, 10.5% in the North, 8.4% in the South and 2.1% in the Midwest regions of Brazil.

Service accessibility can be achieved by means of fixtures and equipment that facilitate physical access, such as ramps or adapted corridors, which can be used

by people with disabilities on an equal basis with other patients. However, only 30.4% of the DSCs had adequate physical accessibility (availability of wheelchairs, corridors and doors adapted for wheelchairs and ramps with handrails); less than half the services (46.9%) had a ramp with a handrail, this being a necessary feature for the elderly and people with reduced mobility (Table 1).

Quality of care is also related to work processes and organization of demand for services. The majority of the services (73.4%) received patients referred by

**Table 1 – Absolute and relative frequency of structural characteristics and characteristics of teams providing clinical care to patients with special needs at Dental Specialty Centers, Brazil, 2014**

| Characteristics  | N   | %    |
|--|-----|------|
| <b>Structural characteristics</b>  |     |      |
| <b>DSCs<sup>a</sup> per macro-region</b>   |     |      |
| North  | 60  | 6,4  |
| Northeast  | 357 | 38,3 |
| Midwest  | 62  | 6,7  |
| Southeast  | 337 | 36,2 |
| South  | 116 | 12,4 |
| <b>DSC<sup>a</sup> Classification</b>  |     |      |
| Type I   | 349 | 37,4 |
| Type II  | 474 | 50,9 |
| Type III   | 199 | 11,7 |
| <b>Number of DSs-PSN<sup>b</sup> per DSC<sup>a</sup></b>                               |     |      |
| 0  | 95  | 10,2 |
| 1  | 553 | 59,3 |
| 2  | 203 | 21,8 |
| 3 or more  | 81  | 8,7  |
| <b>Availability of clinical care for the PSN<sup>c</sup> specialty (in hours/week)</b> |     |      |
| 0h   | 95  | 10,2 |
| <20h   | 117 | 12,6 |
| 20-39h   | 405 | 43,4 |
| ≥40h   | 315 | 33,8 |
| <b>Accessibility</b>   |     |      |
| Adapted corridors  | 717 | 76,9 |
| Adapted doors  | 728 | 78,1 |
| Wheelchair   | 548 | 58,8 |
| Ramp with handrail   | 473 | 46,9 |
| <b>Physical accessibility</b>  |     |      |
| No facilitation  | 86  | 9,2  |
| Some facilitation  | 563 | 60,4 |
| Complete facilitation  | 283 | 30,4 |

a) DSC: Dental Specialty Center.

b) DSs-PSN: dental surgeons specialized in providing care to patients with special needs.

c) PSN: patient with special needs.

Primary Healthcare Centers (PHC) with a referral document describing the case, clinical conditions and prior treatment provided at the PHCs, and 57.5% had protocols defining PHC-DSC referral. As for referral to Tertiary Care, 59.7% of the DSCs were able to refer patients to hospital for care under general anesthesia, so that there was no unmet demand for high complexity services. Patients cared for under the Dentistry for Patients with Special Needs specialty

had complete treatment guaranteed at 76.6% of the services (Table 2).

The DSCs provided care to patients with diverse needs requiring special treatment, such as behavior disorders (92.8%), sensory or physical disability (90.0%), involuntary movements (89.0%), diabetic, heart disease and elderly patients (87.1%), autistic patients (84.1%), HIV-positive people (78.8%) and pregnant women and babies without disabilities (69.9%) (Table 3).

**Table 2 – Absolute and relative frequency of the characteristics of Dental Specialty Center organization and work process, Brazil, 2014**

| Characteristics  | Frequency | %    |
|--|-----------|------|
| <b>PC Referral</b>   |           |      |
| Referral quotas (PSN <sup>a</sup> )                                      | 166       | 17,8 |
| DSCb receives referrals from PHCc (PSN <sup>a</sup> )                    | 683       | 73,4 |
| PHC <sup>c</sup> -DSC <sup>b</sup> referral protocol (PSN <sup>a</sup> ) | 535       | 57,5 |
| <b>Hospital care referral</b>  |           |      |
| Hospital referral – care under general anesthesia                        | 555       | 59,7 |
| <b>Hospital care vacancy organization</b>                                |           |      |
| Quota system   | 121       | 13,0 |
| Number not limited   | 366       | 39,4 |
| Other  | 68        | 7,3  |
| N/A  | 375       | 40,3 |
| <b>Unmet demand for hospital care</b>                                    |           |      |
| Yes  | 110       | 11,8 |
| No   | 410       | 44,1 |
| Unable to answer   | 35        | 3,8  |
| Hospital care not provided   | 375       | 40,3 |
| <b>Average monthly hospital care</b>                                     |           |      |
| 1 a 4  | 504       | 54,2 |
| 5 a 8  | 35        | 3,8  |
| More than 8  | 16        | 1,7  |
| Hospital care not provided   | 375       | 40,3 |
| <b>DSC care</b>  |           |      |
| PSN <sup>a</sup> care waiting time                                       |           |      |
| Up to one week   | 527       | 56,7 |
| Between 8 and 15 days  | 155       | 16,7 |
| More than 15 days  | 164       | 17,6 |
| Unable to answer/did not answer  | 84        | 9,0  |
| Complete treatment for PSNs <sup>a</sup> guaranteed                      | 712       | 76,6 |

a) PSN: patient with special needs.

b) DSC: Dental Specialty Center.

c) PHC: Primary Healthcare Center.

**Table 3 – Profile of service users receiving care through the Dentistry for Patients with Special Needs specialty, as reported by Dental Specialty Center professionals, Brazil, 2014**

| Service user profile                                     | Frequency | %    |
|--|-----------|------|
| Behavior disorders                                       | 863       | 92,8 |
| Sensory or physical disability without behavior disorder | 837       | 90,0 |
| Involuntary movement                                     | 828       | 89,0 |
| Diabetic, heart disease and elderly patients             | 810       | 87,1 |
| Autistic patients  | 782       | 84,1 |
| HIV-positive   | 733       | 78,8 |
| Pregnant women and babies without disabilities           | 650       | 69,9 |

## Discussão

The results indicate that the care network for people with disabilities is being formed, but that gaps and lack of accessibility were found in almost two thirds of existing services. Despite being an obligatory specialty, not all DSCs had personnel qualified in dental care for PSNs and just over half the services had protocols for PSN referral from Primary Care, both of which are necessary for organizing the care network. Nevertheless, the majority of DSCs guaranteed complete treatment for their patients, including referral for hospital care. The exponential growth in specialized oral health services, in less than 15 years, has reduced the demand that mutilating and non-inclusive health models did not meet.<sup>16,17</sup> However, there is still a long way to go.

In 2012, the Ministry of Health added an additional amount to the monthly funding financial incentives for DSCs to ensure care for people with disabilities, as well as referral and counter-referral between DSCs and Primary Care Oral Health teams.<sup>18</sup> Two years later, in 2014, only 250 (24.3%) DSCs had adhered to this initiative and were receiving the financial incentive for the Health Care Network for People with Disabilities.<sup>19</sup> The minimum commitments for receiving the incentive include:

- having at least 40 hours a week exclusively available for care for people with disabilities;
- availability of matrix system support for Primary Care Oral Health teams;
- maintenance of minimum monthly production and input to the National Health System Outpatient Information System (SIA/SUS), by means of the Individualized Outpatient Production Bulletin (BPA-I), for all procedures carried out with people with disabilities;

d) ensuring accessibility and mobility in DSC facilities for people with disabilities; and

e) availability of dentists and dental auxiliaries trained to provide dental care for people with disabilities.<sup>18</sup>

The financial incentive was created because of low population coverage and insufficient availability of services with adequate structure and functioning mechanisms to provide care to people with disabilities. The State perceived the need to expand access and overcome barriers to health services for people with disabilities, as well as to seek ways of reducing the health inequities faced by this part of the population.<sup>18</sup> There is a need to reflect on why a greater number of service managers did not apply for funds to expand care, as all Ministry of Health accredited DSCs have to right to request the additional incentive. Apart from not knowing about the incentive, it is possible that service managers may not be able to find personnel trained to provide care for PSNs in their municipalities or that they have not yet been able to adapt the physical structure of the services so as to ensure universal accessibility. Further studies are needed to gain a better understanding of this shortcoming and to design strategies capable of facilitating DSC manager adherence to the Health Care Network for People with Disabilities.

Public health services must be prepared to receive and care for all patients, especially more socially vulnerable groups, ensuring universal and equitable access. As people with disabilities tend to have lower socioeconomic levels and poorer health status,<sup>1</sup> they should be a preferential target audience of these services which need to be physically adapted and have health professionals trained in caring for them. The situation identified in the results presented here is present

both in Primary Care<sup>20,21</sup> and also in specialized care services. The majority of services (73.2%) are located in government-owned buildings,<sup>14</sup> which allows service managers to make the changes needed to ensure universal access. It is important to highlight that DSCs are referral services for more complex cases of disability and, therefore, removal of physical and communication barriers is necessary.

The majority of people with disabilities can be treated by general dentists in Primary Care, so that only more complex cases should be referred for specialized care.<sup>22</sup> This premise has also been adopted by the Ministry of Health, in its guidelines on referral to Secondary Care of cases whose needs cannot be met by conventional clinical outpatient care. Notwithstanding, the Ministry of Health has not provided a protocol or manual on organizing the demand for the PSN specialty, but rather only a suggested flowchart for referral of people with special needs between Primary and Specialized Care.<sup>12</sup> The Oral Health Specialties Manual, released in 2008, does not include the PSN specialty, as the intention was to produce a specific document on this subject but this has not been published. There are few studies on the oral health referral and counter-referral network and they do not examine the PSN specialty.<sup>20,23</sup> This lack of well-defined protocols and research involving oral health care for people with special needs was also found by our study: only 57.5% of the services studied had protocols for Primary Health Care (PHC) referrals to DSCs.

Moreover, many health professionals do not feel capable of providing this form of care<sup>3,24</sup> and this is why they refer these cases to specialized services. This practice results in DSCs caring for cases that could be cared for in Primary Care, thus increasing the waiting list for patients who need specialized care. As such, all care levels need to be prepared to meet the needs of people with disabilities, ensuring universal access and comprehensive care.

In order for the Health Care Network for People with Disabilities to function adequately, the tertiary care level (hospitals) needs to be available for the small number of cases that cannot be cared for in outpatient services. In 2010, the Ministry of Health created a dental treatment procedure for patients with special needs carried out under sedation and/or general anesthesia in hospital services.<sup>25</sup> For more complex cases, such as male adults with intellectual disabilities or mental disorders, who cannot be cared for in outpatient services, referral

to hospital makes health care possible for them.<sup>26</sup> In Brazil, in 2012, 57.8% of hospitalizations for dental treatment of patients with special needs were for clinical procedures and only 13.29% for extraction of permanent teeth, demonstrating a health model more centered on prevention and tooth restoration.<sup>27</sup>

Waiting time for care was short: over half the services indicated that on average patients received care one week after being referred. This result provides an important indicator of access and services being tailored to demand. Guarantee of complete treatment for PSNs was reported by 76.6% of services, which is possibly the result of efforts made to maintain or reestablish the oral health of people with disabilities cared for at DSCs. As DSC professionals who provide care to PSNs carry out Primary Care procedures, these patients are often not referred back to their primary healthcare centers and the specialized team takes on responsibility for providing their care.

Reaffirming what was stated in the Introduction of this report, dentistry considers a patient PSN to be any individual who has one or more temporary or permanent limitations of a mental, physical, sensory, emotional, growth or medical nature, that prevent them from receiving conventional dental treatment.<sup>28</sup> This rather broad definition can hinder organization of the demand for care. The majority of services provide care to patients with diverse 'special needs' and all these clinical conditions are listed as indications for care under the PSN specialty, according to the Ministry of Health.<sup>29</sup> However, it is appropriate to analyze whether in fact they do need to receive care at DSCs or whether they could be adequately cared for by Primary Health services. As such, PSN demand for DSCs needs to be organized based on care priority for people with disabilities,<sup>30</sup> taking into consideration protocols based on classification of risk and vulnerability.

Care provision to pregnant women and babies without disabilities, for instance, which takes place in 69.9% of the services, results in the use of appointment time that could be used for patients with disabilities who need specialized care that is not provided by Primary Care services. Care provision in Primary Care also needs to be questioned, given that groups that traditionally should be cared for by the Family Health Strategy (ESF), such as pregnant women and babies, are being referred to DSCs. This may suggest lack of ESF personnel preparation to deal with this problem, or lack of structure at the ESF care level.

This study has limitations: (i) the impossibility of causal inference, due to the study's cross-sectional design; (ii) the use of secondary PMAQ-CEO data; and (iii) non-identification of the 54 DSCs that did not take part in the PMAQ external evaluation. A strong point of the study is that it is pioneer in providing a national portrait of the profile of DSCs with emphasis on people with disabilities, showing the interfaces of Secondary Care with the other levels of the oral health care network services.

A decade after the implementation of the Dental Specialty Centers in Brazil, a significant improvement can be seen in access to and provision of specialized oral health care. The services need to be better distributed regionally, as well as needing to make progress with eliminating physical and attitudinal barriers in order to ensure universal accessibility. Even with financial incentive policies, only one third of the DSCs offer 40 weekly hours of clinical care for PSNs. The need can be seen for referral and counter-referral protocols focusing

on people with disabilities, based on risk classification, prioritizing care provision by DSCs in cases of greater complexity, that cannot be cared for in primary health-care centers, as well as the need to ensure referral to hospital services for cases that cannot be cared for in outpatient services.

### Authors' contributions

Condessa AM and Hilgert JB contributed to the concept and design of the article, data analysis and interpretation and drafting the first version of the manuscript. Lucena EH, Figueiredo N and Goes PSA contributed to data analysis and interpretation and critically reviewing the manuscript. All the authors have approved the final version of the manuscript and are responsible for all aspects thereof, including the guarantee of its accuracy and integrity.

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