

# Deployment and management of the Center of Dental Radiology and Care of Patients with Special Needs of the Piquet Carneiro Polyclinic

Luciana Freitas Bastos,<sup>1,2</sup> Geraldo de Oliveira Silva-Junior,<sup>2,3</sup> Débora Lúcia Teixeira Medina de Figueiredo,<sup>2</sup> Bruna Michalski dos Santos,<sup>2</sup> Bruna Lavinas Sayed Picianni,<sup>2,4</sup> Urubatan Vieira de Medeiros,<sup>1</sup> Maria Isabel de Castro de Souza,<sup>1</sup> Fernanda Barja-Fidalgo,<sup>1,2</sup> Michelle Quarti Machado da Rosa,<sup>2</sup> Emylena Salgado Cobalea,<sup>2</sup> Marcelo Daniel Brito Faria,<sup>2,3</sup>

<sup>1</sup>Department of Preventive and Community Dentistry, School of Dentistry, State University of Rio de Janeiro, RJ, Brazil

<sup>2</sup>Center of Dental Radiology and Care of Patients with Special Needs, Piquet Carneiro Polyclinic, State University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil

<sup>3</sup>Department of Diagnosis and Therapeutics, School of Dentistry, State University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil

<sup>4</sup>Department of Stomatology, Fluminense Federal University, Nova Friburgo, RJ, Brazil

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## ABSTRACT

The Center of Dental Radiology and Care of Patients with Special Needs of the Piquet Carneiro Polyclinic was deployed through FAPERJ (FAPERJ notice 31/2012 – case E – 26/112.147/2012 and FAPERJ notice 31/FAPERJ – case E – 26/111.806-2013) and FINEP (No. 0109.0477.00) projects. The Dental Radiology services offer state-of-the-art digital equipment such as: ICAT Next Generation cone beam computed tomography, panoramic radiography, conventional ATM radiography, extra-oral face radiographs and intra-oral insulated and complete periapical radiographs. We have planned five dental offices with the necessary equipment for the dental care of Patients with Special Needs, one of them being specialized in the treatment of patients under general anesthesia. In 2016, we established a partnership with the State Health Department through Joint Resolution SES/UERJ No. 449 of 11 October, 2016, which added more value in relation to the management of personnel, inputs and purchasing of equipment. Special needs patients may reach our services via the State Regulatory System – SER, and in the dental radiology services, in addition to SER, we have the National Regulatory System – SISREG of the municipality of Rio de Janeiro. The Center extended its multidisciplinary care network to patients with disabilities and also to imaging tests in Dentistry, decreased infection foci with outpatient dental treatment, minimized costs and optimized care. In relation to education, we seek to enhance the opportunities for students interested in this type of practice, with extension projects and graduate courses. We consider the understanding of the relationship of professionals with patients, their caregivers and family members to be fundamental, but we also know that the deep transformation processes in Health are complex, and the greatest challenge is seizing the extension of the implications of the disease in an individual's life history. Dental treatment should be seen as the relationship between patient and professional, in the pursuit of the patient's well-being, not only from a technical perspective, but with the aim of establishing a mutual sense of trust and satisfaction.

**Keywords:** Dentistry; Radiology; Patients with special needs; Management.

## Introduction

The Piquet Carneiro Polyclinic's trajectory started on 22 May, 1967, with the inauguration of the São Francisco Xavier Health Care Center, of the National Social Security Institute. In 1995, the Ministry of Health established a partnership with the State University of Rio de Janeiro and the Unit – which was considered the largest outpatient clinic of Latin America – gained a new name: the Piquet Carneiro Polyclinic, in honor of doctor Américo Piquet Carneiro, creator and founder of the first Biomedical Center and of Universidade Aberta da Terceira Idade, both of the State University of Rio de Janeiro. The objective of this partnership was to turn this unit into a space/laboratory for formulation, implementation and evaluation of health models, to strengthen the Unified Health System and encourage the professor-care integration with the prospect of de-hospitalization, emphasizing preventive and effective health practices. After five years of a successful partnership, the Ministry of Health has granted the

transfer of the use of PPC to UERJ, turning it into a new Biomedical Center unit.<sup>1</sup>

Following the logic of the process of implementation of the Unified Health System in the country (SUS), transformations occurring in the health services have been challenging us in relation to the training of personnel, which requires, in addition to the reformulation of the curriculum followed in health schools, the adaptation to SUS's principles.<sup>2</sup> In this sense, PPC becomes an important practice scenario in the production of primary and medium-complexity health care actions in various disciplines of undergraduate and graduate courses, as well as extension projects associated with UERJ's School of Dentistry, and also Projects focused on funding institutions such as FAPERJ and FINEP.

Thus, this article aims to describe the deployment and management of the Center of Dental Radiology and Care of Patients with Special Needs of the Piquet Carneiro Polyclinic.

## Development

Due to there being an inactive space in the Dental Radiology services of the Piquet Carneiro Polyclinic, the team of professionals of this same clinic, assigned to the areas of Radiology, Collective Oral Health, Pediatric Dentistry and Stomatology, achieved, through FAPERJ (FAPERJ notice 31/2012 – case E – 26/112.147/2012 and FAPERJ notice 31/FAPERJ – case E – 26/111.806-2013) and FINEP (No. 0109.0477.00) projects, the reactivation of the Imaging and Dental Radiology Center and the deployment of the service for the care of Special Needs Patients.

The Dental Radiology services offer state-of-the-art digital equipment such as: ICAT Next Generation cone beam computed tomography (Imaging Sciences International LLC, PA USA), which allows the real-time reproduction of the skull of patients and subsequent 3D reconstruction for virtual planning and guided surgery, with greater surgical predictability for cases of face anomalies, tumors, cleft lip and palate, special needs patients and patients with FAP (firearm projectile)-related bone loss. Panoramic radiography, conventional ATM radiography, extra-oral face radiographs and intra-oral insulated and complete periapical radiographs are also offered.

Our center also has lines of research in the area of early oral cancer diagnosis via imaging tests, in partnership with the School of Engineering and the National Computer Sciences Laboratory (LNCC), and in the area of dosimetry, alongside LCR-UERJ and MCTI's IRD. The cone-beam computed tomography system allows the performance of 3D virtual guided surgery, with subsequent production of biomedical prototyping before the realization of laboratory surgeries in patients with tumors, morphological face anomalies such as Cleft Lip and Palate, syndromes and special needs patients.

After a short investigation, we observed the lack of public and private services that provide dental care to Patients with Special Needs. In the municipality of Rio de Janeiro, with approximately 6 million inhabitants, 828,000 *cariocas*, or 14.8% of the population, have declared having some sort of disability; therefore, one in seven Brazilians or *cariocas* had a disability, a fact that justified our initiative. There is a repressed demand in the municipality of Rio de Janeiro, state of Rio de Janeiro, and also in Brazil, of individuals with Special Needs who need dental treatment in the three levels of complexity.<sup>3,4</sup>

A project that has the purpose of providing care to this layer of the population that has historically been excluded from social policies, translates into an opportunity both in their favor, and in favor of the pursuit of the completeness and universality of actions in this sector.<sup>5</sup>

This choice was made based on the Federal Constitution of 1988, which foresees the care of people with disabilities as definite part of the public policy agenda and of the legal framework, in a cross-sectional and comprehensive manner. According to Cotta's criteria (1998), we cannot evaluate a project without considering its coordination with a broader initiative. In this regard, we follow the National Plan on the Rights of People with Disabilities – *Viver sem Limite*, and the National Oral Health Policy (PNSB) *Programa Brasil Sorridente*, implemented by the Ministry of Health (MS) in 2004.<sup>6</sup>

The specialty of Dentistry for Patients with Special Needs aims at the diagnosis, preservation, treatment and control of oral health problems of patients with complexities in their biological and/or psychological and/or social system, in addition to perception and action within a transdisciplinary structure shared with other health professionals and areas related to the patient.<sup>7</sup>

In the Center in question, there are five dental offices with the necessary equipment available, one of them being specialized in the treatment of patients under general anesthesia.

We offer care to patients with mental disabilities, physical disabilities and congenital anomalies (deformities, syndromes), behavioral disorders (autism), psychiatric disorders, sensory and communication disorders, chronic systemic diseases (diabetes, heart diseases, hematologic disorders, chronic kidney failure, autoimmune diseases, vesiculobullous diseases, etc.), contagious diseases (HIV, hepatitis, tuberculosis) and systemic conditions (irradiated, cancer, transplanted, immunocompromised patients and pregnant women), in both outpatient and hospital environments.<sup>8</sup>

The Center was opened at the end of 2016 and began operations in January 2017 (Figure 1). A partnership with the State Health Department was established through Joint Resolution SES/UERJ No. 11 of 2016 October, 2016, which added more value in relation to the management of personnel, inputs and purchasing of equipment.





Figure 1. Center of Dental Radiology and Care of Patients with Special Needs of the Piquet Carneiro Polyclinic

Special needs patients may reach our services via the State Regulatory System – SER, which resulted in the start and completion of the treatment of 232 new regulated patients, and more than 3,000 dental consultations in 2017 and in the beginning of 2018 (up to April). In relation to the dental radiology services, in addition to SER, patients may reach them via the National Regulatory System (SISREG) of the municipality of Rio de Janeiro, which resulted in around 1,100 computed face tomography exams, as well as 700 extraoral and 600 periapical radiographs.

**So far, the Goals Achieved are:**

- The center works from Monday to Friday, offering both radiological examinations and consultations to patients with disabilities, reducing the demand in the state of Rio de Janeiro;
- The partnerships with other healthcare specialties have been established both in relation to joint treatment with the Psychological Care of Patients with Disabilities, and to the use of the center’s space by the areas of Ophthalmology and Plastic Surgery and CTAC inserted in the PPC. We also have a partnership with the PPC’s CAPs. In the Dental Radiology services, this partnership is extended to Institutions LCR, IRD and UFRJ.
- In relation to the socio-demographic and dental profile of the special needs patients of COPE ABO/RJ and of the UERJ Center, a database contemplating them has been created.

- We are reducing the foci of infections with outpatient dental treatment, minimizing costs and optimizing the service.
- We have deployed the Catavento extension project;
- The Specialization in Dentistry for Patients with Special Needs has already been approved in the departments of School of Dentistry, State University of Rio de Janeiro, and is scheduled to start in August/2018, with the coordination of Prof. Geraldo de Oliveira Silva Junior.
- Several studies and scientific articles have been developed and presented in Congresses through proceedings.

**Future Goals**

- Publishing social, demographic and oral health variables of the PWD seen in the Dental Radiology Center and in the specialized healthcare service;
- Intensifying the health workshops on the supervised oral hygiene and topical application of fluoride for the PWD’s caregivers;
- Deploying a new tomography unit for PWD;
- Evaluating the changes caused by the dental treatment in the daily routine of PWD and their families;
- Enhancing the opportunities for students interested in this type of practice with extension projects;
- Expanding the partnership with other healthcare specialties in the PPC for assessment of the patients’ overall health;
- Publishing articles in newspapers and magazines

with national and international relevance;

- Expanding the network of imaging examination services in Dentistry;
- Expanding the network of multidisciplinary care of patients with disabilities;
- Surveying the socio-demographic and dental profile of patients with special needs of the UERJ Center;
- Decreasing the foci of infection for the PWD with outpatient dental treatment;
- Enhancing the opportunities for students interested in both the care of PWD and in the internship programs of the dental imaging and radiography services, with extension projects;
- Developing technical and scientific knowledge in graduate programs in the field of Special Needs Patients and Dental Radiography – Imaging Examinations.
- Deploying a teleradiology system called *laudodental*, which allows sending cone beam images and any digital portraits of the patient's face to the health network system of the city and state of Rio de Janeiro, for the issuing of technical reports by dental radiologists, issuing of second opinion reports, crediting and training of the municipal and state network, and coverage of the network's state and municipal servers' vacation and sick leave expenses. In addition to the quantitative increase in the offer of examinations, the following will also be ensured to users and dentists: specialized teams working 40 hours per week; properly recording and documentation of the examinations on CDs; revision and computerization of reports in real time; properly

packing for delivery; humanized services; constantly updated systems for the management, archiving and distribution of images and epidemiological data.

## Conclusion

We know that, as an educational institution, we have a fundamental role in the promotion of actions that ensure the access to health care services and adequate treatment within them, following proper technical standards and models. In this sense, the Center extended the network of multidisciplinary care to patients with disabilities and also to imaging tests in Dentistry, decreased infection foci with outpatient dental treatment, minimized costs and optimized care. In relation to education, we seek to enhance the opportunities for students interested in this type of practice, with extension projects and graduate courses. We consider the understanding of the relationship of professionals with patients, their caregivers and family members to be fundamental. We have noted the importance of the professional's focus on the patient, since for many years, Dentistry worked under a technical and biology-based philosophy. However, we know that the deep transformation processes in Health are complex, and the greatest challenge is seizing the extension of the implications of the disease in an individual's life history. Dental treatment should be seen as the relationship between patient and professional, in the pursuit of the patient's well-being, not only from a technical perspective, but with the aim of establishing a mutual sense of trust and satisfaction.

## References

1. Policlínica Piquet Carneiro [internet] Rio de Janeiro: [atualizado em setembro 2017] disponível em: <http://www.ppc.uerj.br>.
2. Ministério da Saúde (BR), Secretaria de Políticas de Saúde. Política Nacional de Saúde da Pessoa Portadora de Deficiência. Portaria Nº 1.060, de 5 de Junho de Brasília (DF); 2002.
3. Ministério da Saúde (BR), Secretaria de Políticas de Saúde. Política Nacional de Saúde da Pessoa Portadora de Deficiência. Editora do Ministério da Saúde, 2008. 72 p.
4. Cotta, T. C. Metodologias de Avaliação de Programas e Projetos Sociais: análise de resultados e de impacto. *Revista de Serviço Público*, 49(2):103-24.
5. Figueiredo e Figueiredo. Avaliação política e avaliação de políticas. *Anál e Conj. BH*, 1(3):107-27, set/dez.1996.
6. Reses, M. de L. N. Avaliação da implantação dos centros de especialidades odontológicas em Santa Catarina Dissertação (dissertação) - Santa Catarina: Universidade Federal de Santa Catarina, Centro de Ciências da Saúde. Programa de Pós-Graduação em Saúde Coletiva; 2011.
7. Schliehe F, Ewert T. The International Classification of Functioning, Disability and Health (ICF) - update of the problem based inventory]. *Rehabilitation (Stuttg)*. 2013 Feb;52(1):40-50.
8. Freire, A. L. A. e Silva de S. Saúde bucal para pacientes com necessidades especiais: análise da implementação de uma experiência local. / Ana Lucia Araujo e Silva de Souza Freire. 2011. 254 f.



### Mini Curriculum and Author's Contribution

1. Luciana Freitas Bastos – DDS; PhD. Contribution: performed the data collection, manuscript writing, manuscript review and work supervisor. ORCID: 0000-0002-0788-4211
  2. Geraldo de Oliveira Silva-Junior – DDS; PhD. Contribution: performed the data collection, manuscript writing. ORCID: 0000-0003-0987-2684
  3. Débora Lúcia Teixeira Medina de Figueiredo – DDS; MSc. Contribution: performed the data collection and wrote the manuscript. ORCID: 0000-0002-2441-7113
  4. Bruna Michalski dos Santos – DDS; PhD. Contribution: performed the data collection and wrote the manuscript. ORCID: 0000-0002-7707-4628
  5. Bruna Lavinias Sayed Picianni – DDS; PhD. Contribution: performed the data collection, manuscript writing, manuscript review. ORCID: 0000-0001-7592-1785
  6. Fernanda Barja-Fidalgo – DDS; PhD. Contribution: performed the data collection, manuscript writing, manuscript review. ORCID: 0000-0002-4098-8637
  7. Urubatan Vieira de Medeiros – DDS; PhD. Contribution: performed the data collection, manuscript writing, manuscript review and work supervisor and the final approval. ORCID: 0000-0001-7822-2672
  8. Maria Isabel de Castro de Souza – DDS; PhD. Contribution: performed the data collection, manuscript writing, manuscript review and work supervisor and the final approval. ORCID: 0000-0002-0355-9673
  9. Michelle Quarti Machado da Rosa - PhD. Contribution: performed the data collection, manuscript writing. ORCID: 0000-0002-3036-3991
  10. Emylena Salgado Cobalea - PhD. Contribution: performed the data collection, manuscript writing. ORCID: 0000-0001-9215-4450
  11. Marcelo Daniel Brito Faria – DDS; PhD. Contribution: performed the data collection, manuscript writing, manuscript review, work supervisor. ORCID: 0000-0001-8853-9948
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#### Corresponding Author

**Luciana Freitas Bastos**

E-mail: [lucianafreitasbastos@yahoo.com](mailto:lucianafreitasbastos@yahoo.com)