

Indicators proposed by the Brazilian Ministry of Health for monitoring and evaluating oral health actions in the National Health System: documentary research, 2000-2017*

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Abstract

Objective: to present the indicators for monitoring and evaluation of oral health actions in the Brazilian National Health System (SUS), proposed in the period 2000-2017. **Methods:** documental research conducted on the Ministry of Health website regarding government guidelines on oral health monitoring and evaluation systems; the indicators were classified according to the following categories: access to care; resolute capacity and continuity; and availability of oral health services. **Results:** oral health indicators were identified in the following guidelines: 'Health Services Performance Evaluation Methodology Project', 'SUS Qualification Evaluation Program', 'National Program for Improving Primary Care Access and Quality', and 'SUS Performance Index'; most of them refer to access to services and resolute capacity and continuity of care. **Conclusion:** oral health indicators in the four government guidelines identified provide important input for health management, but new indicators are needed for effective monitoring and evaluation of oral health actions.

Keywords: Indicators of Health Services; Oral Health; Health Management; Government Document.

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Introduction

With effect from 2004, public policies have been put into place in Brazil with the aim of improving access to and qualification of the Brazilian National Health System (SUS). As such, the Ministry of Health has scaled up its guidance for health service managers on the process of planning, executing, evaluating and monitoring their actions. Different programs and projects have been established, along with their appropriate health indicators.¹⁻³

With effect from the first decade of the 2000s, increasing importance has been placed on oral health within the Public Health scenario. Furthermore, the process of SUS decentralization has favored actions being planned according to local reality, requiring health service managers to have knowledge of the health situation and health system performance prior to making decisions.⁴

The Ministry of Health has scaled up its guidance for health service managers on the process of planning, executing, evaluating and monitoring their actions

Within this context, the effectiveness of indicators provided to evaluate health system policies, actions and performance are being questioned. There is a scarcity of studies about them, including the data needed to calculate them and their source. A previous publication analyzed the evolution of oral health indicators present in the SUS Interfederative Pacts between 1998 and 2016.⁵

The objective of this study was to present the indicators proposed by the Ministry of Health for monitoring and evaluating SUS oral health action qualification between 2000 and 2017.

Methods

Documental research was conducted on governmental guidelines, i.e. projects, programs and indices available about SUS qualification monitoring and evaluation systems issued between 2000 and 2017 containing oral health indicators.

Initially the data were obtained using the Ministry of Health website search engine (<http://portalsaude.saude.gov.br/>), in August 2017 and October 2018, using the following descriptors, together, and their correlates: indicators; and oral health. Further searches were then performed on the above mentioned source based on the references found. When reading the references, we checked whether they cited other Ministry publications covering SUS qualification evaluation; a further search was then performed to identify whether such publications contained information about oral health indicators. If these publications were not found on the Ministry website, we searched for them using the Google search engine.

The guidelines found were analyzed with regard to the following aspects:

a) documents – title and year of publication; and

b) indicators – category, calculation method, collection source and purposes.

As some guidelines presented indicators classified in categories while others did not, we opted to reclassify and/or group together all the indicators in three general categories: access to care; service availability; resolute capacity and continuity. The data collected on oral health indicators were classified according to these three categories and presented in table format.

This research was not submitted to the appraisal of an ethics committee as the documents analyzed were available through a public domain website address.

Results

Our searches identified 186 publications of the governmental ordinance, information and guideline type. The Ministry of Health guidelines comprising the SUS qualification monitoring and evaluation systems and which contained oral health indicators between 2000 and 2017 were: Health Services Performance Evaluation Methodology Project (PROADESS); SUS Qualification Evaluation Program; National Program for Improving Primary Care Access and Quality (PMAQ) – Cycles 1, 2 and 3; and SUS Performance Index (IDSUS).

The indicators relating to each of these guidelines can be found in Tables 1, 2 and 3.

Health Services Performance Evaluation Methodology Project (PROADESS)

PROADESS⁶ had four indicators (Table 1) for oral health service performance evaluation. Based on the categories proposed in this study, three of the indicators were classified in the access to care category and one in the service availability category.

Brazilian National Health System (SUS) Qualification Evaluation Program

The SUS Qualification Evaluation Program⁷ is comprised of diverse indicators, divided into two dimensions: access and quality. In our study, these indicators were classified into two groups: access to care; and service availability (Table 1).

National Program for Improving Primary Care Access and Quality (PMAQ)

The PMAQ cycles occurred during the period analyzed: the 1st Cycle in 2011;⁸ the 2nd Cycle in 2013;⁹ and the 3rd Cycle in 2015.¹⁰ Different oral health indicators were identified. The 1st and 2nd Cycles used the same indicators^{11,12} (Table 2), the majority of which were classified into the access to care category.

In the 3rd PMAQ Cycle,¹ despite their reduced number – when compared to the preceding cycles –, different indicators were incorporated and these were classified into three categories: access to care; service availability; resolute capacity and continuity (Table 2).

Table 1 – Oral health indicators proposed by the Health Services Performance Evaluation Methodology Project (PROADESS) and by the Brazilian National Health System (SUS) Qualification Evaluation Program

Category	Indicators and sources	Guideline	Calculation formula	
			Numerator	Denominator
Access to care	Dental appointment Sources: PNAD and PNS	PROADESS	No. of people who had a dental appointment in the last 12 months x 100	Total resident population
	Percentage of people who never had a dental appointment Sources: PNAD and PNS	PROADESS	No. of people reporting never having had a dental appointment x 100	Total resident population
	Percentage of the population reporting having used health services in the last 15 days, in a given geographical space. Sources: PNAD and PNS	PROADESS	No. of people seeking health services in the last 15 days and who received care x 100	Total resident population
	Coverage of first programmatic dental appointment ^a Sources: SIA/SUS and IBGE	SUS Qualification Evaluation Program	Total number of first programmatic dental appointments ^a attended in a given place and period x 100	Population in the same place and period
Service availability	Number of dental surgeons per 100,000 inhabitants, in a given geographic space, in the year under consideration. Source: CNES	PROADESS	No. of dental surgeons x 100 mil	Total resident population
	Estimated population coverage of the Family Health Strategy Oral Health teams Sources: FCES and IBGE	SUS Qualification Evaluation Program	No. of Family Health Strategy Oral Health teams implanted (Modalities I and II) x 3,450 people	Population in the same place and period x 100

Sources: Ministry of Health; 2011a6; 2011b7.

a) 'First dental appointment' is considered to be when the preventive treatment plan is prepared. Urgent/emergency care is not taken into consideration.

Legend:

PNAD: National Household Sample Survey.

PNS: National Health Survey.

CNES: National Health Establishment Registry.

SIA/SUS: Brazilian National Health System Outpatient Information System.

IBGE: Brazilian Institute of Geography and Statistics.

FCES: Health Establishment Registry Form.

Performance Index (IDSUS)

With regard to oral health, IDSUS has indicators for access potential (measures service delivery availability) or access obtained (measures services delivered), and effectiveness (evaluates the result obtained).¹³ We classified these indicators into two categories: service availability; resolutive capacity and continuity (Table 3).

Discussion

The results provide evidence of diverse indicators for SUS health care qualification. The majority of the oral health indicators fell into the access to care category. Over the years analyzed few indicators of service resolutive capacity and continuity were proposed, and

Table 2 – Oral health indicators proposed by the National Program for Improving Primary Care Access and Quality (PMAQ) – Cycles 1, 2 and 3

Category	Indicators	Calculation formula (and sources consulted)		Parameter
		Numerator ^a	Denominator	
1st and 2nd Cycles				
Access to care	Coverage of first programmatic dental appointment	No. of first programmatic dental appointments in a given place and period x 100	Population registered in the same place and period Source: SIAB Form A	Not provided
	Coverage of first dental care appointment for pregnant women	No. of pregnant women having first appointment with Oral Health team dental surgeon in a given place and period x 100	No. of pregnant women registered in the same place and period Source: SIAB SSA2 Report	Not provided
	Average urgent dental care session per inhabitant	No. of urgent dental care sessions performed by the Oral Health team dental surgeon in a given place and period	Population registered in the same place and period Source: SIAB Form A	Not provided
	Oral mucosa alteration incidence rate	No. of diagnoses of oral mucosa alteration in service users care for the by Oral Health team in a given place and period x 1,000	Population registered in the same place and period Source: SIAB Form A	Not provided
Service availability	Average supervised collective dental brushing actions	No. of people taking part in the supervised collective dental brushing action performed in a given place and period x 100	Population registered in the same place and period Source: SIAB Form A	Not provided
	Average dental prosthesis fitted	No. of dental prostheses fitted by the Oral Health team in a given place and period	Population registered in the same place and period x 0.03 Source: SIAB Form A	Not provided
Resolutive capacity and continuity	Ratio between concluded treatments and first programmatic dental appointments	No. of treatments concluded by the Oral Health team dental surgeon in a given place and period	No. of first programmatic dental appointments carried out by the Oral Health team dental surgeon in the same place and period Source: PMA2 Report – SIAB Complement	Not provided

Sources: Ministry of Health, 20171; Brazil, 2011c8; Brazil, 2013a9; Brazil, 201510; Ministry of Health, 201211; Ministry of Health, 2013b12.

a) Sources of 1st and 2nd Cycle numerators: PMA2 Report – SIAB Complement.

Legend:
SIAB: Primary Care Information System.

to be continue

continuation

Table 2 – Oral health indicators proposed by the National Program for Improving Primary Care Access and Quality (PMAQ) – Cycles 1, 2 and 3

Category	Indicators	Calculation formula (and sources consulted)		Parameter
		Numerator ^a	Denominator	
3rd Cycle				
Access to care	Coverage of first programmatic dental appointments	No. of first programmatic dental appointments attended x 100	Population registered	15% first programmatic dental appointment attended/year 1.25% first programmatic dental appointment attended/month
Service availability	Percentage of services made available by the Oral Health team	Quantity of actions and service performed by the Oral Health team x 100	Total actions and services expected by the Oral Health team	70%/month
Resolutive capacity and continuity	Ratio between concluded treatments and first programmatic dental appointments	No. of treatments concluded by the dental surgeon	No. of first programmatic dental appointments	0.5-1.0 treatment concluded/month

Sources: Ministry of Health, 20171; Brazil, 2011c8; Brazil, 2013a9; Brazil, 201510; Ministry of Health, 201211; Ministry of Health, 2013b12.
a) Sources of 1st and 2nd Cycle numerators: PMA2 Report – SIAB Complement.

Legend:
SIAB: Primary Care Information System.

in programs that had more than one cycle some indicators were excluded.

A literature review¹⁴ identified studies on evaluation of dental care in health services in Brazil published as at June 2010. The majority of the 23 studies published between 2002 and 2010 evaluated Primary Care, while care quality and access to services were focused on by three and four of those studies, respectively.¹⁴

Access indicators demonstrate ease or difficulty in getting health care.¹⁵ Our study identified different indicators in this category. A literature review of oral health indicators used in Brazil for the period 2000 to 2012,¹⁶ identified that the indicator of access to dental appointments was one of the most frequent.

The service availability category corresponds to resources available to meet service users' demands.¹⁷ The most frequent indicator in this category was the estimated population coverage of Family Health Strategy Oral Health teams. The Brazilian National Health System (SUS) Qualification Evaluation Program, proposed in 2011 to evaluate SUS performance,⁸ included this indicator.

The resolutive capacity and continuity category refers to the capacity to identify health risks, needs and demands until the problem is solved.¹ One of the indicators identified in this category was the proportion of tooth extraction among procedures performed. Tooth extraction enables evaluation of the extent to which dental practices involve mutilation.¹⁶ Another indicator identified in this category was the ratio between concluded treatments and first programmatic dental appointments, representing adherence to treatment and treatment conclusion.

Set up in 2001, the mission of PROADESS⁶ is to evaluate health service performance based on the principle of equity, using a matrix categorizing indicators into four dimensions: health determinants; health conditions; health system structure; and health service performance.

The principle of equity has been evaluated according to two main dimensions: health conditions; and health service access and use.¹⁸ PROADESS classified oral health indicators according to the latter dimension. With regard to the implementation of equitable health policies, three of their aspects stand out: re-

Table 3 – Oral health indicators proposed by the Brazilian National Health System Performance Index (IDSUS)

Category	Simple indicators and sources	Calculation formula		Parameter
		Numerator	Denominator	
Service availability	Population coverage estimated by the Oral Health teams Sources: CNES and IBGE	Average monthly number of Family Health Strategy Oral Health teams plus Average monthly number of qualified equivalents per each 60 hours/week of non-Oral Health team dental surgeons x 3,000 inhabitants	Population resident in the municipality	50% coverage taking one Primary Care Oral Health team per each group of 3,000 inhabitants in the year assessed
	Average supervised collective dental brushing actions Sources: SIA/SUS and IBGE	No. of people taking part in the supervised collective dental brushing action in the 12 month period, in a municipality, divided by 12 x 100	Population in the municipality in the period evaluated	8 participants per 100 inhabitants – average of municipalities covered by Oral Health teams or THD/ACD teams greater than 60%
Resolutive capacity and continuity	Proportion of tooth extraction in relation to dental procedures Sources: SIA/SUS and IBGE	No. of teeth extractions performed in a municipality and year evaluated x 100	Total individual preventive and curative procedures, selected per municipality and year evaluated.	8% (percentage close to the average for the year 2010: 8.6%) of all Brazilian cities that performed dental procedures on the SUS

Sources: Ministry of Health; 2013¹³.

Legend:

ACD: Dental Consulting Room Auxiliary.

CNES: National Health Establishment Registry.

IBGE: Brazilian Institute of Geography and Statistics.

SIA/SUS: Brazilian National Health System Outpatient Information System.

THD: Dental Hygiene Technician.

source distribution; access availability or timeliness; and service use.¹⁹

Models proposed for health service evaluation have matrices that include dimensions, subdimensions, indicators and, in some cases, calculation formulae and indicator parameters.²⁰ In our study we identified guidelines using different models and indicators, some of which had parameters. PMAQ came into being in 2011⁸ and proposes evaluation and monitoring of the processes and results achieved in Primary Care, in order to ensure access and qualify health care offered to the population.⁹ It is noteworthy that the 3rd PMAQ cycle incorporated indicator parameters, as well as an indicator of the existence of a minimum number of oral health services.¹ The incorporation of these elements can contribute to oral health team work process management and organization.

IDSUS was introduced in 2011 with the aim of 'evaluating SUS performance with regard to compliance with its principles and guidelines'.² However, oral health indicators were only proposed in the service availability

and resolutive capacity and continuity categories and these are insufficient to achieve this evaluation.

Indicator parameters were introduced in the last PMAQ cycle and in IDSUS. However, few studies on dental care evaluation have specified the criteria, indicators or parameters used. Where parameters have been presented, they were based on local service targets, or Health Ministry performance targets, or even established by the authors themselves.²⁰ Different oral health evaluation models are found in the literature, approaching diverse indicator dimensions, names and calculation formulae.²⁰⁻²⁶ A methodological proposal for service action and performance evaluation and monitoring must contain elements that favor analysis of compliance with SUS principles, so that its managers strengthen and qualify the system. In the field of Oral Health, however, the indicators cover few dimensions.

We conclude that oral health indicators were proposed in four governmental guidelines in the period from 2000 to 2017. Although they provide important support for Oral Health management, new indicators

need to be incorporated, capable of broadening the scope of the evaluation of the quality of Public Health System service delivery and performance.

Authors' contributions

França MASA contributed to the study conception and design, data analysis and interpretation and

writing the manuscript. Pereira EM and Marcelo VC contributed to the study conception and design, data analysis and interpretation. Freire MCM contributed with a critical review of the manuscript's contents and drafting. All the authors have approved the final version of the manuscript and declare themselves to be responsible for all aspects of the work, including the guarantee of its precision and integrity.

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