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Indicators for teenager's oral health's surveillance

Flávia Christiane de Azevedo Machado [1]
Georgia Costa de Araújo Souza [2]
Luiz Roberto Augusto Noro [3]

Abstract *The existence of a few indicators that could guide the evaluation of oral health surveillance in the primary health care attention, mainly in adolescence life cycle, raised the realization of this study. To develop indicators to this end, it was conducted: document analysis to guide the development of a logic model and selection of data to compose indicators. This selection and validation of the logic model were performed by a group of four experts that, from the perspective of the modified Delphi method, analyzed if the model illustrated the activities, results and expected impact of a primary oral health service to enable the adolescents oral health surveillance and assigned points (0-10) to each data proposed. Then, those data judged important by the consensus of experts (média≥7; standard deviation <3) were used to construct indicators. After individual analysis and group discussions, the logical model and 36 of the 48 data, initially proposed, were consensually important, resulting in 26 indicators. The indicators matrix intends to be a situational diagnostic tool to assess, plan and manage health actions to adolescents, but it can be used in other life cycles by its adaptation.*

Key words *Oral health, Information systems, Adolescents, Public health surveillance*

[1] Departamento de Saúde Coletiva, Universidade Federal do Rio Grande do Norte (UFRN). Av. Senador Salgado Filho 3000, Lagoa Nova. 59078-970 Natal RN Brasil. flavitamachado@yahoo.com.br
[2] Departamento de Odontologia. Universidade do Estado do Rio Grande do Norte. Caicó RN Brasil.
[3] Programa de Pós-Graduação em Saúde Coletiva, UFRN. Natal RN Brasil.

Introduction

The purpose of the Health Information Systems (SUS) is to assess the territory´s health situation to support better decisions for health policy, planning, management, monitoring and evaluation of health programs; quantify/determine the volume of financial resources to be transferred to each service; as well as support epidemiological analysis and assessment[1-3].

However, there are critical points regarding to some SIS in Brazil that need to be overcome in order for these SIS achieve their purpose. One of these nodes is the limitation of offer information needed by managers to guide priority actions due to biologists and fragmented vision about the health/disease process, still hegemonic within the SIS. This reflected in the predominance of[1-5] disease indicators.

In this way, overcoming the limitations of the information must resound the ressignification of health where are present other dimensions including indicators that signals the real situation of the studied territory regarding the health-disease process. In this sense, the indicators related to issues that permeate National Health Humanization Policy (PNH) enable not only size changes in health-disease frameworks, but also include issues involved in the health work process[6].

The PNH proposes developing relational technologies and sharing of management practices and implement processes for monitoring and evaluation, emphasizing knowledge generated in the Unified Health System (SUS) and successful collective experiences. As a consequence, the capacity of intervention of the Health System on the sanitary reality will be amplified and improved, providing more subsidies for the concretization of the right to health[7]. Regarding to oral health, regardless of the level of health care attention, analysis and use of information are still precarious. Historically, oral health information contained in health information systems were mainly consolidated by information of outpatient production and few indicators proposed by the Pact for Basic Care[8]. In this sense, the Performance Index of the Unified Health System (IDSUS), a synthetic indicator benchmarking built to enable a contextualized evaluation of SUS´s performance presents only three oral health indicators and all of them refer to primary health care: estimated population coverage by the basic oral health teams; the collective action average of supervised tooth brushing and tooth extractions ratio in relation to individual preventive and curative clinical procedures[9]. This situation hinders the implementation of a health surveillance model attention as advocated by the SUS and an evaluation, not just in a normative way, of the effectiveness of oral health at the local level. In spite of advances , with the insertion of Oral Health Team in the Family Health Strategy and the establishment of a Brazilian Oral Health Policy (PNSB)[10], the results are not yet visible in the structuring of health services and do not promote, as a matter of fact, significant changes in oral health care model[11,12].

The existence of a few indicators that could guide the monitoring and evaluation of oral health actions at the local level and, potentially, to promote the implementation of the oral health surveillance model attention has raised the development of this study.

It was decided to prioritize adolescents from 15 to 19 years of age, since it is common for this group not to seek the health unit and tend to underestimate their health risk behaviors, since they generally feel invulnerable or minimally susceptible to them. However, when well-targeted, they are able to perpetuate healthy behaviors throughout life[13].

In addition, despite a reduction in caries prevalence among teenagers, the results of the latest national survey of oral health – SB Brazil 2010 – indicated that 18% of 12-year-old adolescents have never been to the dentist, untreated caries index of 44.5% among 15 to 19 years-old adolescents and 39% of them reported some difficulty to carry out activities related to mouth[14].

Based on the above the aim of this study was to construct a matrix of indicators to support the construction of an Adolescent Oral Health Information System (SISBA).

Method

This is a development study that aims the systematization of existing knowledge and the development of an intervention or of a measuring instrument[15]. In this case, the measuring instrument is a matrix of indicators that can assess oral health services at the local level. Therefore, the evaluation of health services is the purpose of this study.

The systematization of knowledge took place initially by the formulation of a logical model for the services related to the oral health of adolescents (15-19 years) of primary health care from the perspective of health surveillance. The logical model defines how the service should be-

have in order to achieve the expected results in a given organizational and policy context[16]. Thus, the model of this research aims to illustrate the resources, activities and results required by Primary Care Oral Health Teams Whose mission is to *promote health, prevent disease and injuries and reduce morbidity*.

To guide the construction of this model, it was carried out a literature and documental review of the National Health Humanization Policy[7], the Basic Care Notebook nº17[8], Brazilian Oral Health Policy[10], rulings by the Brazilian Ministry of Health 267/2001[17] and articles related to the subject investigated.

From the logical model it was identified criteria and data that could be used to construct indicators to integrate SISBA. These criteria and data were distributed in components and sub-components (proximal and distal) of an evaluation matrix. This matrix built by the researchers was submitted to a content validation process by four experts. The Group of *experts* was formed by teachers of undergraduate degree in dentistry and graduate studies in collective health of a federal public University with experience in public health services and publications in the area of evaluation of oral health services. The experiences are related to coordination of epidemiological national and state surveys, insertion in the coordination of oral health of the State Secretariat of health and development of research and extension actions on primary and secondary oral health in municipal scope. Thus, the principle for the selection of *experts* was the concrete empirical knowledge about oral health services, the academic experience and experience in services in management or assistance.

The group of experts was personally invited to participate and received by e-mail information about the study protocol for the construction of the SISBA evaluation matrix. Such matrix should be analyzed based on the following guiding question*: to assess the oral health care of adolescents in primary health care, which criteria/data should be used to compose a health information system?*

The evaluation matrix was composed from components and sub-components (keywords that aggregate a set of activities of the logical model) and criteria (the attribute structure, process or result used to measure the components)[18], in addition to the data required for definition of the criteria. To every one of the criteria was requested to experts the proposition of a grade ranging from zero (maximum disagreement as to the inclusion of the criterion/data in the matrix) to 10 (maximum agreement about its inclusion).

For validation of the evaluation matrix, it was opted for the "Delphi modified" method, which consists in the inclusion of at least one round of face-to-face discussion between experts[1], through association with the technique of consensus conference[16]. The study took a first round with the application of the traditional Delphi technique, in which the experts evaluated individually the proposed matrix of SISBA, assigning each item of the matrix a value from zero (0) to 10 (ten). In addition, it was possible to include new criteria and their respective values[19].

After the evaluation, the *experts* sent the matrix and their comments by email to researchers so that they proceed with the calculation of the average (importance attributed to each criterion/data) and standard deviation (SD) (the degree of consensus of the *experts* as to the relevance of the criteria/data).

Secondly, the nominal group was performed, as advocated in the modified Delphi method. Therefore, there was a discussion about the relevance of the logical model and, then, of the criteria and data of the matrix, exposing visually, at the same time, to the experts the average and standard deviation calculated. Would also be discussed the "new" criteria; however there was no proposition by *experts*.

After the discussion, this matrix was forwarded by e-mail to an individual reassessment by confirmation/assignment of notes. Then the experts returned this reassessment for the calculation of the averages and the DP score assigned. The criteria/data with average ≥ 7 (criterion/important data) and DP < 3 (consensus of *experts*) were kept in the matrix, and the other removed[16].

The four *experts* invited to the study participated in all phases of research and had a deadline of two weeks for evaluation of pre and post nominal group matrix.

After this phase of validation of the criteria and data, the group of researchers met to discuss and build indicators for evaluating and monitoring issues related to oral health care model in the perspective of National Oral Health Policy and the National Health Humanization Policy. The indicators defined primed for simplicity of understanding, validity, and availability[18]. In this way, the Group took such characteristics for selection/creation of indicators.

Results

The components of the logic model were built based on the pillars of basic care, *Care coordination and longitudinality, Accessibility and Completeness of Attention*[8,20]. Regarding the subcomponents, strategic management stands out, which is usually not discussed in the perspective of integrality of attention. However, take care and manage the health work process make up a single reality, since there is no way to change the modes to meet population health service without also change the logistics of work processes, the dynamics of team interaction, mechanisms for planning, decision-making, participation and assessment[21].

The representation of the context through the National Health Humanization Policy (PNH) as the components and sub-components of the model were assigned as adequate by the experts. The PNH, as a transversal policy to all SUS policies and programs, would have its principles and precepts (user embracement, participative management, ambience, expanded and shared clinic, worker valorization and protection of the Rights of Users) as guiding principles of all policies Health, including the Smiling Brazil (Brasil Sorridente) – PNSB[7,8].

Each of the components of the logical model showed activities consistent with their implementation in the daily routine of the Basic Health Units, with a view to obtaining results that will impact on the reduction of oral morbidity, quality of life improvement and empowerment (Figure 1). The logical model presented to the experts had its validity validated, since they identified plausibility among its constituent elements. Thus, it was possible to construct a coherent logical model of health surveillance, which includes health as a social product, derived from the relationships present in a given political, economic, cultural and ideological scenario[22].

Regarding the results of the matrix judgment, these are presented according to the two evaluation moments performed by the *experts*. In the first moment of evaluation have been proposed 48 items that would respond to the proximal logical model subcomponents. Of this total, 36 considered important in the evaluation of experts by consensus (average ≥ 7 and d. p < 3) as shown in Table 1.

In this first evaluation, there was data whose *experts* judged measure questions already measured by another element of the array, so, although valid, received low-scoring *(adolescents residing in the area assigned, references to the care of patients with special needs)*. Others considered valid, but difficult to measure *(first dental appointment, queries to complete treatment, self-declaration of using drugs by the adolescents)*. However, there were data that, according to the evaluators, did not measure what was proposed, classified as non-valid (*professionals with more than one year in the unit, SIS feeding, suspension of the transfer of funds*). Data entered into the subcomponent sanitation and environment that could be picked up on other information systems and exceeded the governability of Basic Health Unit (UBS) received low scores *(garbage collection, sewage network coverage, presence of fluoridated water and concentration of fluoride in the water)*.

In turn, in the second round of evaluation, 23 data were considered to be consensually important. Specifically, there was the reaffirmation of the exclusion of the *first dental appointment* data and *queries for completion of treatment*, as well as the full exclusion of the data contained in the criteria *garbage collection, sewage network, water supply; Monthly supply of SIS; Suspension of funding and Establishment of interpersonal relationship* for the reasons already exposed.

Still, there was consensus about the exclusion of other criteria in full: 1- *articulation between levels of care;* 2- *Referrence and counter reference to the CEO;* 3- *specification of demands sent to the CEO;* 4- *Capturing user needs;* 5- *Professional training;* 6- *Precariousness of labour relations.*

Regarding the first three criteria, it was evaluated, respectively, that the *number of references to the CEO* would already be included in the criterion *articulation between the services*; the relevant for measuring the institution of reference and counter-reference would be the number of references itself and not the time interval in which these occurred; the data relating to dental specialties of CEO, although important, were removed by also being referred to in criterion *articulation between the services* and the data referring to the treatments on the Psychosocial Care Centers (CAPS) were removed, because even though it specify a possible user need, not necessarily would identify activities or results related to oral health teams.

With regard to the *Capturing users needs*, it was discussed that there would be a low discriminatory power in situations of low frequency event (self-declaration of drugs) and that the *number of diagnosis of eating disorders conducted by nutritionist and/or doctor arising from the referral by the Dentist (CD)* would be included in the criterion *articulations between the services*.

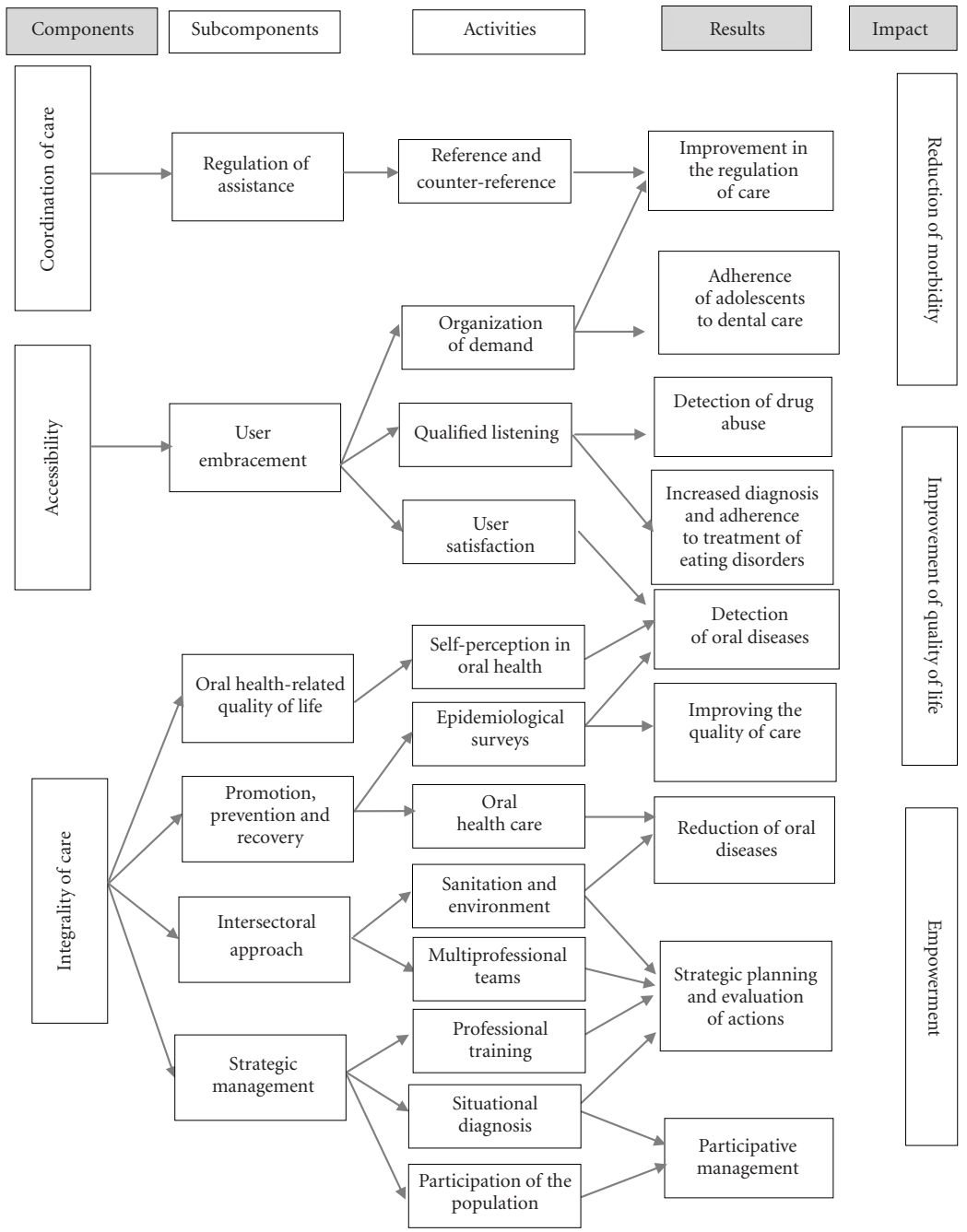

Figure 1. Logical model of oral health care of the adolescent in the family health strategy.

The last two criteria were excluded because they were judged as not valid. It was argued that the effective employment bonds do not, necessarily, be related to greater commitment to the work and, therefore, would not be a factor of professional motivation. With regard to professional training, it would not be congruent with an information system in the perspective of surveillance. This is possibly related to the prevalent view that information systems are characteristic

Table 1. Criteria and data organized according to the components and subcomponents deemed consensually important for subsidizing the construction of indicators to compose SISBA.

Proximal subcomponent	Criterion	Data	Delphi (Pre-conference)		Post Conference	
			Average	s.d	Average	s.d
COMPONENT: COORDINATION OF CARE SUB-COMPONENT: REGULATION OF ASSISTANCE						
Reference and counter-reference	Articulation between the services	Referrals to other professionals	10	0	**9**	1.41
	Relationship between levels of attention	References to the CEO	9.33	1.15	~~**6.5**~~	~~4.50~~
	Routing and the CEO[1]	Time to be serviced	10	0	~~**7.5**~~	~~5~~
	Specification of demands sent to the CEO	References to the orthodontist	9	1.41	~~**2.25**~~	~~4.5~~
		References to the periodontist	9	1.41	~~**2.25**~~	~~4.5~~
		References to maxillo facial surgeon	9	1.41	~~**2.25**~~	~~4.5~~
		References to endodontist	9	1.41	~~**2.25**~~	~~4.5~~
		References to Prosthodontics	9	1.41	~~**2.25**~~	~~4.5~~
		References of patients with special needs	7.5	3.54	~~**2.25**~~	~~4.5~~
		Adolescents in treatment in CAPS[2]	10	0	~~**2.25**~~	~~4.5~~
COMPONENT: ACCESSIBILITY SUBCOMPONENT: USER EMBRACEMENT						
Demand organization	Characteristics of attendances	Adolescents residing in the assigned area	7.5	5	**9.5**	1
		Adolescents attended at the UBS	10	0	**10**	0
		First dental appointment	7.25	4.85	~~**6.5**~~	~~4.43~~
		Completed treatments	9.75	0.5	**9.75**	0.5
		Queries to complete treatment	7	4.76	~~**6.75**~~	~~4.57~~
	Care deficit	Total of patients on the waiting list	9.5	1	**9**	1.15
	Home care visits	Home visits to adolescents	10	0	**9.5**	1
	Precarious link	Adolescents who have abandoned treatment	7.5	2.89	**7.5**	2.38
Listen qualified	Capturing demands	Diagnosis of eating disorders	8.25	2.36	~~**5.25**~~	~~3.86~~
		Licit and illicit drug users	5	4.08	~~**3.5**~~	~~4.36~~
User satisfaction	Satisfaction – collected by ACS[3]	Users satisfied with the service provided	10	0	**10**	0
COMPONENT: INTEGRALITY OF CARE SUBCOMPONENT: QUALITY OF LIFE RELATED TO ORAL HEALTH						
Self-perception in oral health	Difficulties in performing activities of daily living	OIDP[4]	8.25	2.36	**9.5**	1

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of epidemiological surveillance and not health surveillance (epidemiological, sanitary, environmental, worker's health together) nor of surveillance related to the health- Disease itself (health surveillance). The latter related to health service available that would act as a social determinant.

After consolidated and validated criteria, were defined 26 indicators presented in Chart 1.

Table 1. continuation

Proximal subcomponent	Criterion	Data	Delphi (Pre-conference)		Post Conference	
			Average	s.d	Average	s.d
COMPONENT: INTEGRALITY OF CARE SUBCOMPONENT: PROMOTION, PREVENTION AND RECOVERY						
Epidemiology	Epidemiological surveys	Procedure performed in social spaces	10	0	**10**	0
Oral health care	Supervised brushing	Collective actions carried out by the Oral Health Team	10	0	**9.75**	0.5
	Assistance actions carried out in social facilities	Non-invasive procedures*	10	0	**9.75**	0.5
	Actions by the Oral Health Team	Biopsies	10	0	**10**	0
	Oral cavity adequacy	Dental restoration	10	0	**10**	0
	Prevention of oral cancer	Tooth extractions	9.67	0.58	**10**	0
	Curative actions	Dental scaling	9.75	0.5	**10**	0
		Dental trauma	9.67	0.58	**10**	0
		Emergencies	9.67	0.58	**10**	0
	Non-elective health action	Traumatismo dentário	9.67	0.58	**10**	0
			9.67	0.58	**10**	0
COMPONENT: INTEGRALITY OF CARE SUBCOMPONENT: INTERSECTORAL APPROACH						
Sanitation and environment	Garbage collection, sewage network, water supply	Garbage collection	7.5	5	~~**4**~~	~~4.90~~
		Coverage of the sewage network in municipality	7.5	5	~~**4**~~	~~4.90~~
		Presence of fluoridated water	7.5	5	~~**5**~~	~~5.77~~
		Concentration of fluoride in water	7	4.76	~~**5**~~	~~5.77~~
Multiprofessional teams	Actions carried out by multidisciplinary team	Collective actions carried out with multidisciplinary team	10	0	**10**	0

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Discussion

The SISBA aims to constitute a situational diagnosis tool for the planning and programming of health actions aimed at teenagers, but with a good adaptation can subsidize the construction of systems to other life cycles. However, your main purpose is to provide an assessment on the effectiveness of the model health monitoring in the context of local health units and, therefore, the experience of the principles and values of the PNH in health care and in the management of care. The health surveillance constitutes a model of analysis that uses the territory as a space of reference, highlighting the importance to consider the heterogeneity of the population as to their needs and access to health services[23].

The definition of adolescence as a priority of the SISBA cycle related to the global context of demographic and epidemiological transition characterized by the decrease of fertility rates, increased life expectancy and a higher incidence of chronic diseases/contagious face and appearance of the harms to health as being responsible for significant morbidities[24] population. In this sense, one can infer some increased costs of public health assistance, if there is a longevity associated with quality of life[25]. We must promote and develop health promotion policies targeted both the ageing population as it possibly age. In this

Table 1. continuation

Proximal subcomponent	Criterion	Data	Delphi (Pre-conference)		Post Conference	
			Average	s.d	Average	s.d
COMPONENT: INTEGRALITY OF CARE SUBCOMPONENT: STRATEGIC MANAGEMENT						
Professional training	Courses and training	Semester courses for the Oral Health Team	8	2.16	~~**3.25**~~	~~3.95~~
		Semi-annual trainings for the Oral Health Team	8.25	2.362	~~**5**~~	~~3.56~~
		Semi-annual training to other professionals in the ESF[5]	8	2.16	~~**3.25**~~	~~3.94~~
		Professionals who have made specialization after entry into service	9.5	1	~~**6**~~	~~4.55~~
Situational diagnosis	Monthly feed of the information system: SIAB[6]	Feed of the information system	7.5	5	~~**5**~~	~~5.77~~
	Suspension of the transfer of funds	Suspension of the transfer of funds	6.25	4.79	~~**4.5**~~	~~5.26~~
	Establishment of interpersonal relationship	Professionals with more than one year in the Family Health Unit	6	2	~~**4**~~	~~2.70~~
	Precariousness of labour relations	Professionals with an effective link in the Family Health Unit	8.25	2.36	~~**5**~~	~~3.74~~
Participation of the population	Planning	Multiprofessional planning meetings	10	0	**9.75**	0.5
		Meetings with users	8.75	2.5	**7.5**	2.89

* Non-invasive procedures: cariostatic application for tooth, Topical Application of Fluoride individual, plaque disclosure, provisional restoration.
[1] CEO: Center of Dental Specialties; [2] CAPS: Center for Psychosocial Care; [3] ACS: Community Health Agent; [4] OIDP: Oral Impact on Daily Performance - Checking for difficulty in performing activities to: eat, talk, smile, study, sleep, maintain mood, socially relate, perform mouth hygiene due to a problem in the mouth, tooth or prosthesis, and attributed motive to this difficulty. This information should be collected before and at the end of treatment; [5] ESF: Family Health Team; [6] SIAB: Basic Attention Information System.

sense, the cycle of adolescence would be adapt to the practices of promotion of healthy habits for active ageing, cognitive and motor development characteristic of this phase promotes susceptibility to social behavior changes and your lifelong conservation[13,26]. So, schedule actions for the resolution of the accumulated needs in adolescents configured in a matter of public health.

Oral health, notes the need to facilitate strategies to combat poor adolescents access to dental services, especially at the age of 15 to 19 years, characterized as a second phase of adolescence. According to data from the SB Brazil 2010, 65.1% of teenagers between 15 and 19 years autoreferiram need for dental treatment, 24.7% reported toothache in the 6 months prior to the survey and 13.6% of those teens never consulted with the dentist. It also observed that the 12 years, 43.5% of the people are free of dental caries in permanent dentition, while the 15 to 19 years, this percentage is 23.9%[14].

The second phase of adolescence builds up larger assistance needs in relation to the first phase. This, possibly, occurs by difficulty of General access to dental care services that culminates in an increasing morbidity over the life of the individual but also to the hegemonic assistance model. In Brazil, for many decades, predominated in the public service the dental care model curativista and mutilator. In this panorama, a care model called Incremental System geared to schoolchildren in the age group of six to 14 years,

Chart 1. Indicators, objectives, sources and methods of calculation defined by consensus to compose the SISBA, organized according to the proximal subcomponents and criteria of the logical model.

Criterion	Bookmark	Objective	Source	Method of calculation
Proximal subcomponent: Reference and counter reference				
Articulation between services	Proportion of adolescents referred by the dentist to other professionals in Primary Care	To quantify references to other professionals in Primary Care from the perspective of teamwork and intersectoral approach	SIA[1] SIAB[2]	Number of referrals of adolescents conducted by the dentist to other Primary Care professionals divided by the total number of Primary Care attendances x 100 (every six months)
Proximal subcomponent: Demand organization				
Characteristics of health care	Proportion of adolescents resident in the assigned area attended by OHT[3]	To quantify the access demand within the group of adolescents	SIAB IBGE[4]	Number of first dental appointments in adolescents divided by the total of adolescents x 100 (every six months)
	Proportion of adolescents attended by OHT	To quantify the frequency of access of adolescents in the general population	SIAB	Total number of first dental appointments in adolescents divided by the total number of first dental appointments in the general population x 100 (every six months)
	Proportion of dental care completed in adolescents	To evaluate the efficaciousness of access within the group of adolescents	PMAQ[5] (modified)	Number of completed treatments in adolescents divided by the number of first dental appointments in adolescents x 100 (every six months)
Deficits of attendances	Proportion of adolescents attended by OHT in the universe of demands	Check the service deficit	SIAB Primary data	Total number of first dental appointments in adolescents divided by the number of patients on the waiting list x 100 (every six months)
Home visits	Proportion of home care visits of OHT targeting adolescents	To identify new forms of care, breaking with the passivity of the traditional units of primary care and establishing linkages and approaches with adolescents and their families, interacting with home spaces	Primary source (adapted from SIAB)	Number of home care visits of the OHT to the adolescents divided by the number of home visits performed x 100 (every six months)
Precariousness of labour relations	Proportion of adolescents who have left the dental treatment program	To identify the abandonment of adolescents to dental treatment	Primary source SIAB	Number of adolescents who have left the treatment divided by the number of first dental appointments in adolescents x 100 (every six months)
Proximal subcomponent: User satisfaction				
Satisfaction – collected by ACS[6]	Proportion of adolescents satisfied with the attendance of OHT	To measure the satisfaction of adolescents with the attendance by OHT	PMAQ	Number of adolescents users satisfied with the service provided by OHT divided by the total number of first dental appointments in adolescents x 100 (every six months)
Proximal subcomponent: Self-perception in oral health				
Difficulties in performing activities of daily living	OIDP[7]	Check efficaciousness of attention; To identify difficulties by adolescents even after completion of dental care, from the perspective of qualified listening	SIAB	Number of adolescents who reported some difficulty related to mouth divided by the number of complete dental treatments in adolescents x 100 (every six months)

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Chart 1. continuation

Criterion	Bookmark	Objective	Source	Method of calculation
Proximal subcomponent: Epidemiology				
Oral needs surveys	Coverage of epidemiological surveys of oral health	To articulate health services to social facilities with the intersectoral approach	Primary sources; SIA	Number of school adolescents participating in an epidemiological survey of oral health divided by the total number of adolescents enrolled in schools x 100 (every six months)
	Proportion of adolescents with oral needs detected in epidemiological surveys	To articulate health services to social facilities with the intersectoral approach	Primary sources; SIA	Number of school adolescents with dental treatment needs identified in epidemiological surveys divided by the number of adolescents investigated in epidemiological surveys of oral health at school x 100 (every six months)
	Proportion of adolescents who accessed the dental service with oral needs collected in epidemiological surveys	Verify the effectiveness of intersectoral approach in expanding access to the service	PMAQ; Primary data	Total number of first dental appointments in adolescents per semester divided by the number of adolescents with oral health needs identified in surveys x 100 (every six months)
Proximal subcomponent: Oral health Care				
Supervised brushing	Coverage of supervised dental brushing in adolescents	To verify coverage of supervised brushing in the adolescent population	SIAB IBGE	Number of adolescents participating in the supervised brushing dental collective action divided by the total number of adolescents in the area x 100 (every six months)
Assistance actions carried out in social facilities	Coverage of educational actions of oral health in adolescents by the multiprofessional team	To verify coverage of oral health educational actions in adolescents from the perspective of multidisciplinary teamwork	Primary source	Number of educational actions directed to the adolescent carried out with the participation of multiprofessional team

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which lasted for more than 40 years. In this way, one can say that the other population groups were underserved public dental policy, being restricted to emergency calls and not conservatives[27].

In order to exercise, in fact, actions based on the Health Surveillance model, democratic and participatory practices are required, in the form of teamwork, directed to populations for which responsibility for oral health care assumed, considering the dynamics in the Territory in which these populations live. In addition, it is necessary to institute an information-valued culture in organizations to verify the implementation and implementation of this model in health work processes. One of the ways to consider the dynamicity of the territory is to use epidemiology as a situational diagnostic tool for planning health actions in[28] health.

Under such aspect, the epidemiology would be a technology, according to the design of Mehry[29], which could increase the scope of the organizational mission of health care, health care. For this, the information produced should focus on the Health Sciences 'reference', transposing the genesis of information immersed in the 'reference' Disease Sciences in order to contemplate the complexity of specific processes of health/disease/care[31].

Factors related to the work process from the perspective of health surveillance referred to the SISBA. These factors relate to implementation of a health care network, *modus operandi* of assistance (actions developed by the capture of the demand analysis of the services performed and epidemiological surveys) and management services.

Chart 1. continuation

Criterion	Bookmark	Objective	Source	Method of calculation
Actions taken by OHT	Coverage of educational actions of oral health in adolescents	To verify coverage of oral health education in adolescents	Primary source	Number of adolescents who participated in educational activities of oral health conducted by OHT divided by the total number of adolescents in the area x 100 (every six months)
Oral cavity adequacy	Average noninvasive procedures performed at school and in other social spaces in adolescents	To verify the effectiveness of intersectoral approach in expanding access to the service	Primary sources; SIA	Number of adolescents who underwent oral procedures at school and in other social spaces divided by the total number of adolescents of the area x 100 (every six months)
	Proportion of non-invasive procedures in adolescents	To observe the modification of a curativist for a preventive model	SIA (Colussi and Calvo, 2011)[33]	Number of non-invasive procedures in adolescents divided by total procedures in adolescents x 100 (every six months)
Preventive actions of oral cancer	Proportion of biopsies performed in adolescents	Capture demands	SIA	Number of biopsies on soft tissues of the mouth made in adolescents divided by the number of dental care performed in adolescents x 100 (every six months)
Curative actions	Proportion of restorative procedures in adolescents	Capture demands	SIA	Number of dental restorations performed in adolescents divided by the number of dental care performed in adolescents x 100 (every six months)
	Proportion of dental extractions performed in adolescents	Capture demands	SIA	Number of tooth extractions (deciduous and permanent teeth) performed in adolescents divided by the number of dental care performed in adolescents x 100 (every six months)
	Proportion of dental scaling conducted in adolescents	Capture demands	SIA	Number of dental scaling conducted in adolescents divided by the number of dental care performed in adolescents x 100 (every six months)
Non-elective health action	Proportion of trauma cases in adolescents	Capture demands	SIA	Number of dent-alveolar traumatisms cases in adolescents divided by the number of dental care performed in adolescents x 100 (every six months)
	Proportion of emergency consultations in adolescents	Capture demands	SIA	Number of dental consultations of urgency in adolescents divided by the number of dental care performed in adolescents x 100 (every six months)
Proximal subcomponent: Multiprofessional teams				
Actions carried out by multiprofessional team	Coverage of actions carried out by multiprofessional team	To verify coverage of actions carried out by multiprofessional team	Primary source	Number of adolescents who participated in actions carried out by multiprofessional team divided by the total of adolescents in the area x 100 (every six months)

it continues

As for management, the SISBA includes the participatory strategic planning consistent with the prospect d the co-management. The co-management is a way of managing which includes thinking and make collective, setting into an éticopolítica directive to democratize relations in

Chart 1. continuation

Criterion	Bookmark	Objective	Source	Method of calculation
Proximal subcomponent: Participation of the population				
Planning	Proportion of multiprofessional planning meetings	To capture demands	Primary source	Number of multiprofessional planning meetings of the ESF[8] divided by the number of meetings (every six months)
	Proportion of meetings with users to grasp problems and guide planning	To capture problems and guide planning in the context of co-management and user participation	SIA	Number of meetings held by the ACS which participation of 10 or more people, with a minimum duration of 30 minutes in order to disseminate information, discuss strategies of overcoming health problems or to contribute to the community organization divided by the number of scheduled meetings (every six months)

[1]SIA: Outpatient Information System; [2]SIAB: Basic Attention Information System; [3]OHT: Oral Health Team; [4]IBGE: Brazilian Institute of Geography and Statistics; [5]PMAQ: National Program for Improving Access and Quality of Primary Care; [6]ACS: Community Health Agent; [7]OIDP: Oral Impact on Daily Performance; [8]ESF: Family Health Team.

the health field[31]. With regard to the *MOS*, the SISBA includes indicators to check the modification of a model of attention curativista to the preventivista, the breadth of access to this attention, the actions taken by the service (both in your physical space as social equipment by the community) for the raising demands and for the assistance itself.

Regarding the establishment of a network of the search SISBA to evaluate specific points of oral health care Network, notably, the articulation between the APS and Secondary attention represented by the CEO. This is because these are more technological density levels demanded by Brazilians. However, even not including indicators related to other points of attention (tertiary and Quaternary), the SISBA may raise evaluations elsewhere in operating the network structure (support; logistics systems; governance system)[24]. This is because finding a poor articulation between the APS and the services, you must get the whys and certainly, other factors should investigated. In fact, in an assessment it is necessary to select the indicators to be monitored so that these signals the possible problems the effectiveness and efficiency of the service in the midst of the impracticality of periodically reviewing a large number of indicators.

SISBA indicators relate the reference and contrarreferência (01), organization of demand (06), users' Satisfaction (01), Self-perception in oral health (01), epidemiology (03), oral health care (11), multiprofessional Teams (01) and (02). These issues are widely cited in the literature as relevant to an assessment of services in support of quality, but are not encompassed by national SIS used to assess oral health services[32,33]. Nevertheless, 26 indicators selected to compose the SISBA, 11 have your construction based on primary data need to be collected by the service.

However, many of the indicators SISBA are built based on data recorded routinely for oral health teams in the information systems of the SUS. However, these data are not used as a subsidy to build guiding work process indicators and, consequently, as management tools and management. In this sense, Bueno et al.[32] to propose indicators to support an assessment of oral health services of Cambé (Paraná), of 13 indicators validated, eight had as information sources national SIS. It should stressed that this study aimed to develop and validate indicators for evaluating oral health service specific municipal and not compose indicators for basic care in a generic way. Such aspect is relevant, because it denotes the difference in the composition of the groups selected to validate the indicators.

In the case of SISBA, the composition encompassed acting professionals in attendance, since there would be no time for definition of param-

eters and goals where the involvement of directly involved in service is essential. Already Bueno et al.[32] included in workshops for logical model validation and array of indicators, professionals in the city of Salvador in performance in assistance and coordination. In the same sense, Colussi and Calvo[30] to develop a model to assess the quality of the basic buccal health attention and test your applicability in Santa Catarina municipalities of different sizes, also involved insertion service professionals (08 dentists with expertise in State management, in teaching or in research in Santa Catarina for over four years, with experience in health assessment).

As for the SISBA, it believed in your validity in assessing the oral health care of adolescents in primary health care, once the indicators presented significant the importance values (average) and concurrence (standard deviation) of the evaluators. Of 48 posts data to trial of 12 *experts*, submitted after the second evaluation round, average 10 (very important) and standard deviation zero (total consensus). The smallest average and standard deviation were relating to data: teenagers who left treatment (average: 7.5; standard deviation: 2.38) and (meetings with users (average: 7.5; standard deviation: 2.89). Even the scores were lower due to the difficulty of assessing the abandonment of treatment and low frequency of meetings with user participation. Thus, the data considered important, more difficult to measure. Therefore, the array of SISBA offers the potential to provide an assessment in data reliability from the relevance of the composition of the Group of experts and of the degree of agreement of the same obtained in the study.

With regard to the argument of the infrequent use of the information, Martino[34] shows that the municipalities in your most do not use indicators, other than those agreed upon by the Ministry of health and State departments, expressing a practice of using information for planning, control and evaluation of the actions of oral health has not assimilated. Thus, infers that the use of indicators to occur by governmental requirements and not on the initiative of the services.

Amid the need to elucidate how the oral problems interfere with the growth and development of adolescents, to establish strategies to combat these problems and to establish parameters of oral health, the development of technologies such as the SISBA is essential, since it seeks to enable a decentralization of local information for the strategic planning and programming of actions considering the characteristics and peculiarities of the territory and your population assigned.

However, the SISBA seeks to break away from the prospect of SIS epidemiological essentially requiring a change of perception about the several purposes that an SIS may have for improving the work process. Including, the SISBA requires modifications to the infrastructure of the UBS, seen that demand the use of information technology (hardware, software, internet). This implies that the professionals have knowledge, skills and affinity with the field of information technology so that they can feed the system, consolidate the data and analyze it. However, these issues already discuss in Brazil. In this regard, initiatives such as the SISAB[35] provide the supply of microcomputers to UBS, while permanent education policy[36] assumes work process improvements including the use of information and communication technologies.

The challenge of SISBA is the ability to use your in any locale, giving Brazilian external validity. This is possible, to the extent that your array of indicators built based on guiding Machado of PNSB. Therefore, depending on the reality of the territory that will applied, you can add or reduce indicators. The criteria for this should be the agreement of these indicators with the actors involved in the process of work considering, among other factors, your validity and feasibility[32].

Even the argument above relates to a limitation of the study is the non-application of the array of SISBA to verify your applicability *on the spot*. However, this was not the objective of this work which consisted essentially in build a logical model illustrating how should be the operation of a service of oral health basic attention focused on adolescent oral health surveillance and, under this approach, propose indicators to check how much the service would be approaching this model of attention. However, amid the challenge of the legitimacy of the SISBA, it is necessary an evaluative research about your services and deployment prior to this analysis, develop workshops where the SISBA can deployed to compromise the standards and goals of each indicator with the professionals of these services. Therefore, this study aims to conduct other studies showing that research strategies and valuation, in fact, have a procedural character.

The institutionalization of the SUS card use can be a facilitator in the implementation of the SISBA, including contributing to avoid duplicity of information[37]. At the local level, the SISBA

will contribute to the monitoring of oral health services and for the use of information by professionals, as a tool for assessing and planning the health teams. Your bookmarks can used to evaluate the impact of actions implemented by the health teams for building and analyzing a local historic series. Distal level, compete for the implementation of the right to health, in particular, the adolescents and the equity of health policies. This is because Brazil has the challenge of instituting policies, programs and actions to the groups once excluded, in order to minimize social inequalities in health.

Collaborations

FCA Machado and GCA Souza participated in the conception, design, analysis, interpretation of data, article and review, LRA Noro participated in the analysis and interpretation of data, article writing and critical review.

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