



# ciência plural

## INDICATORS FOR EVALUATION OF SPECIALIZED DENTAL CENTERS BY EXPERTS CONSENSUS METHOD

*Indicadores para la evaluación de centros dentales especializados por método de consenso de expertos*

*Indicadores para a avaliação de centros odontológicos especializados pelo método do consenso de especialistas*

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## ABSTRACT

**Introduction:** Specialized Dental Centers should support Primary Health Care within medium complexity. **Objective:** Build performance indicators based on a logic model that illustrates the resources, activities, products, and results required by a Specialized Dental Center to fulfill its mission. **Methodology:** To validate them, teachers, middle managers and managers (n = 6) assigned a score (0-9) to each attribute (validity, sensitivity, specificity, relevance, simplicity, cost-effectiveness, opportunity) of the indicators, before and after group discussion. **Results:** From 82 initial indicators, 63 were considered important by consensus (median  $\geq 7$ ; interquartile distance  $\leq 2$ ) related to motivation for work; absenteeism to the consultations; organizational atmosphere; patient safety; participative management; financial resources; productivity; health education and interaction Specialized Dental Center/Primary Care formed the final matrix that envisages to subsidize performance evaluations, mainly based on work processes. **Conclusions:** The final indicator matrix is consistent with the discussions, where it was essential to propose indicators, focusing on the work processes developed and the integration of primary health care and specialized dental centers in favor of the health network. Thus, it seeks to constitute a self-assessment tool that verifies how the work processes in the specialized dental centers align with the organizational values of primary health care.

**Keywords:** Oral Health; Secondary Care; Health Evaluation; Health Services Research.

## RESUMEN

**Introducción:** Los Centros dentales especializados deben respaldar la Atención primaria de salud dentro de una complejidad mediana. **Objetivo:** Construir indicadores de rendimiento basados en un modelo lógico que ilustre los recursos, las actividades, los productos y los resultados que necesita un Centro Dental Especializado para cumplir su misión. **Metodología:** Para validarlos, profesores, mandos intermedios y gerentes (n = 6) asignaron un puntaje (0-9) a cada atributo (validez, sensibilidad, especificidad, relevancia, simplicidad, costo-efectividad, oportunidad) de los indicadores, antes y después discusión de grupo. **Resultados:** De 82 indicadores iniciales, 63 se consideraron importantes por consenso (mediana  $\geq 7$ , distancia intercuartílica  $\leq 2$ ) relacionados con la motivación para el trabajo; ausentismo a las consultas; ambiente organizacional; seguridad del paciente; administración Participativa; recursos financieros; productividad; educación e interacción con la salud. El Centro Dental Especializado / Atención Primaria formó la matriz final que contempla subsidiar las evaluaciones de desempeño, principalmente basadas en procesos de trabajo. **Conclusiones:** La matriz de indicadores final es coherente con los debates, en los que era esencial proponer indicadores, centrándose en los procesos de trabajo desarrollados y en la integración de la atención primaria y los centros dentales especializados en favor de la red sanitaria. Así, pretende constituir una herramienta de autoevaluación que verifique cómo los procesos de trabajo en los centros odontológicos especializados se alinean con los valores organizativos de la atención primaria.

**Palabras clave:** Salud Bucal; Atención Secundaria de Salud; Evaluación en Salud; Evaluación en Servicios de Salud.

## RESUMO

**Introdução:** Os Centros Dentários Especializados devem apoiar a Atenção Primária à Saúde dentro de uma complexidade média. **Objetivo:** Construir indicadores de desempenho com base em um modelo lógico que ilustra os recursos, atividades, produtos e resultados exigidos por um Centro Odontológico Especializado para cumprir sua missão. **Metodologia:** Para validá-los, professores, gerentes médios e gerentes (n = 6) atribuíram uma pontuação (0-9) a cada atributo (validade, sensibilidade, especificidade, relevância, simplicidade, custo-benefício, oportunidade) dos indicadores, antes e depois da discussão em grupo. **Resultados:** Dos 82 indicadores iniciais, 63 foram considerados importantes por consenso (mediana  $\geq 7$ ; distância interquartil  $\leq 2$ ) relacionados à motivação para o trabalho; absenteísmo às consultas; atmosfera organizacional; segurança do paciente; gestão participativa; recursos financeiros; produtividade; educação em saúde e interação Centro Dentário Especializado/Cuidados Primários formaram a matriz final que prevê subsidiar avaliações de desempenho, principalmente baseadas em processos de trabalho. **Conclusões:** A matriz final de indicadores é coerente com as discussões, onde foi essencial propor indicadores, focalizando os processos de trabalho desenvolvidos e a integração a atenção primária à saúde e os centros dentários especializados em favor da rede de saúde. Assim, procura constituir uma ferramenta de auto-avaliação que verifica como os processos de trabalho nos centros dentários especializados se alinham com os valores organizacionais da atenção primária a saúde.

**Palavras-Chave:** Saúde Bucal; Cuidados Secundários; Avaliação em Saúde; Pesquisa sobre Serviços de Saúde.

## Introduction

Evaluation should provide improvement in the quality of health care, equity in access and utilization of health services<sup>1</sup>. Nevertheless, monitoring the quality of the Brazilian Public Health Care System (SUS) services is an implicit duty in social control<sup>2</sup>. However, such duty is hampered by the fragile evaluative culture and character of the evaluation performed in health services. In the case of Specialized Dental Centers (SDC), an evaluation focused on the minimum services necessary for the financial transfer of resources predominates, and not an evaluation of services quality. Nevertheless, initiatives such as the National Program for Improving Access

and Quality of SDC (PIAQ-SDC) indicate the need for periodic evaluation for satisfactory results, to guarantee financial incentives and certification of the quality of care provided<sup>3</sup>.

Regarding quality, it should be defined according to the service objective, considering the environment in which it is inserted, and to understand it as a construct of components, attributes or dimensions. Each institution must choose its target attributes that will define quality<sup>4</sup>. In this sense, a performance evaluation is promising for considering economic, educational and social inequalities that influence the achievement of the goals and objectives of the services<sup>5</sup>. Performance refers to the degree in which health services reach goals, adapt and generate quality products<sup>6</sup>.

Regardless of the evaluation type, it is necessary to clarify principles, objectives and goals to be evaluated<sup>5</sup>. Building theoretical models helps in this sense<sup>6,7</sup>, illustrating how the service can achieve the expected results<sup>8</sup>, guiding the selection of performance indicators. To select criteria, indicators or valid standards is a critical evaluation issue<sup>6</sup>, and verification by expert consensus is an indicated technique<sup>9</sup>.

Thus, this study aimed to build SDC performance indicators by the modeling technique and to validate them by consensus by nominal group.

## Methodology

It is an evaluative research characterized as a developmental study by systematizing knowledge to develop a measurement instrument<sup>10</sup>. In this case, indicators for a SDC self-assessment. For this, a review of the literature was carried out [National Oral Health Policy<sup>11</sup>, Basic Care Notebooks nº 17<sup>12</sup>, Manual of Oral Health Specialties<sup>13</sup>, Official orders related to the SDCs and evaluation articles of these Centers] to investigate factors potentially involved in the SDC performance, allowing to build a logical operating model.

In order to identify the model elements [components, subcomponents, resources, activities, products and results], the participants answered questions about

the SDC in order to structure how they work<sup>14</sup>. After that, a matrix of indicators was built with factors potentially related to performance.

Subsequently, experts evaluated the model and matrix for content validation. "Specialist" was considered as an individual with empirical knowledge about evaluation of oral health services and experienced in the management or assistance practice of these services<sup>15</sup>. Convergent strategy to participatory pluralistic evaluation research<sup>16</sup>.

In the nominal group, there was 06 members with experience in SDC management [n=02]; participation in municipal oral health coordination [n=02] and empirical experience in the evaluation of oral health services [n=02]. In addition, they have *stricto sensu* graduation in public health and had participation approved by coordinator of SB Brazil 2010, according to sample of judgment<sup>17</sup>. As for the number, we followed Kitzinger's<sup>18</sup> indication of composing a group from 04 to 08 subjects. The experts individually assessed the consistency of the logical model, the pertinence and relevance of the criteria and matrix indicators, and the collection source to compose these indicators, guided by the question: To evaluate the SDC performance, which indicators should be used?

For each indicator, scores were assigned to attributes-validity, sensitivity, specificity, relevance, simplicity, cost/effectiveness, opportunity<sup>14</sup>, ranging from 0 [high disagreement as to the indicator to have the attribute under evaluation] to 9 [high agreement as to the indicator to have the attribute under evaluation]. Scores were used to capture the group overview through the median, and the agreement between participants, through the interquartile distance, for the set of matrix indicators.

To calculate the median score of the seven attributes of each indicator, a dataset was designed for each evaluator. Medians in the six datasets were transported to another dataset to calculate the median and interquartile distance of the scores given among the evaluators for each indicator.

To facilitate evaluation, the matrix had a theoretical/objective basis for including the indicator and collection source for its construction. When the score was

zero, we requested the participant to justify and to propose changes. Then, the matrix, post- individual analysis and discussion, presented such observations that were consolidated in the matrix post-nominal group to send via e-mail for re-evaluation. After this process, indicators with median  $\geq 7$  and interquartile distance  $\leq 2$  were selected to compose the evaluative matrix.

After validating the indicators, a prototype evaluation matrix was structured for SDC performance analysis. However, it is necessary to establish standards, in face of the locoregional needs, by the professionals of the SDC to be evaluated for classification in: optimal [percentage varying from 80 to 100% of the maximum score]; good [60 to 79%]; regular [36 to 59%] and insufficient [0 to 35%] based on the quotient of the points reached by the service compared to the maximum possible score [Final score=  $(\Sigma \text{ score obtained} / \Sigma \text{ maximum score}) \times 100$ ]. The study was approved by the Ethics Research Committee of the University Hospital Onofre Lopes (HUOL) of Federal University of Rio Grande do Norte under #375.097.

## Results and discussion

### Logical Model

Based on the modified theory of the system, considering the influence of the organizational, socioeconomic and cultural context of the target population and beneficiary of the service on its operation. Bezerra et al<sup>19</sup>. study on structure, activities, results and impacts helped to delineate the elements of the model. The elements were organized with the SDC mission as the main axis and the conformation of a health care network as impact.

Components and subcomponents seek to contemplate the management of care; Ability to plan the assistance to the user to promote health with therapeutic projects that respond to the principles of bonding, co-responsibility, equity and integrity. Thus, it characterizes a democratic management of health services based on the expansion of autonomy, definition of pacts, partnerships and creation/re-creation of meanings of health practices<sup>20</sup>. The theoretical framework investigated indicates the

pertinence of this management to the SDC and to any health service. Nonetheless, the National Humanization Policy, cross-sectional to Brazilian health policies, defends values and actions characteristic of this management.

Regarding components, in "support for primary health care", the matrix support stands out as a work process suitable to the SDC mission of supporting PHC. This emphasis seeks to demonstrate ways of a more dynamic integration between the different levels of health care. The matrix support seeks to customize reference and counter-reference systems, stimulating and facilitating direct contact between the case reference (oral health staff of the family health strategy) and the support specialist (SDC professionals). It constitutes a strategy to support PHC, increasing the possibilities of an expanded clinic, integrating dialogically different specialties and professions<sup>20</sup>.

The "evaluation, planning and monitoring" component contemplates actions carried out by PHC and SDC professionals together, because a constant dialogue between these professionals is essential to delineate strategies and to agree on goals consistent with the demands of the population and the capacity for assistance (resources that the service offers and those that it does not offer, but that can be made feasible, including by partnerships).

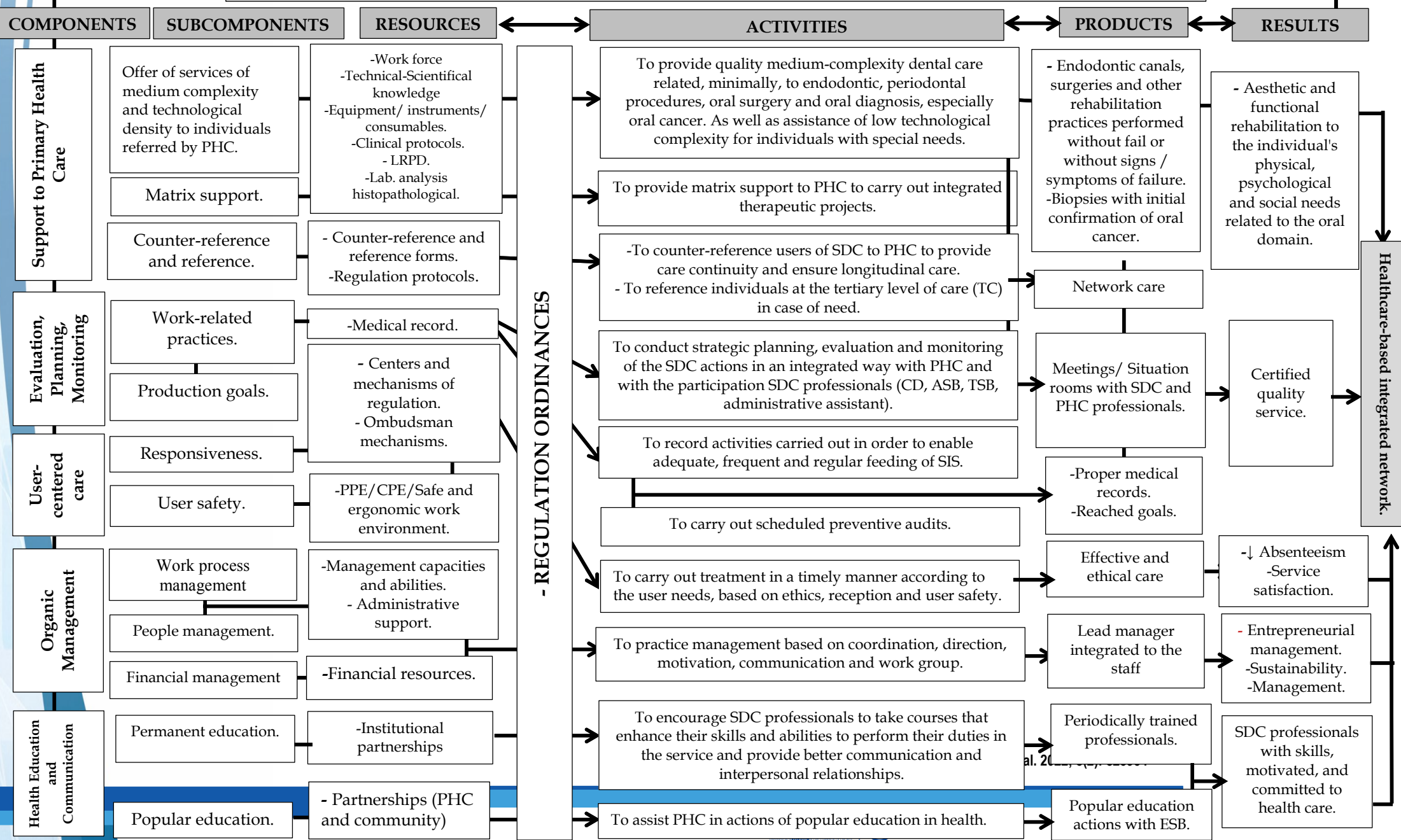
In the "user-centered care" component, there are actions related to responsiveness and safety. Responsiveness refers to the vision or experience of service users to verify how rights are observed in the access and use of services<sup>21</sup>. In this sense, the ombudsman is illustrated in the logical model and should represent a permanent interaction between the health system and the users. It is a space for the user's doubts, suggestions, possible criticism and praise, speeding up changes relevant to the qualification of care<sup>22</sup>. Safety is an attribute of quality when the assistance of a service does not imply injury to the user<sup>23</sup>. In the meantime, it is related to the biosafety of the practices and physical facilities of the services that, when not properly executed or present, respectively, may cause work accidents involving professionals and users. However, safety includes incidents that cause harm, but also failures in the attention

they could cause harm. Therefore, safety has intersections with other dimensions of quality, such as service accessibility<sup>4</sup>. Therefore, safety was highlighted in the model, demystifying relevance only at the hospital level.



**Figure 1-** Logical model on Specialized Dental Centers operation. Natal-RN, 2019.

**SDC MISSION: TO SUPPORT PRIMARY ORAL HEALTH CARE WITHIN SECONDARY HEALTH CARE IN A HEALTH**



The "organic management" component is related to the subcomponents that contemplate typical managerial activities: planning, organization, leadership, execution and control<sup>24</sup>. However, the difference of the organic model is to conceive health practices as praxis. In praxis, previous knowledge does not exempt the agent from the need to reflect prudently during the activity execution, and it is necessary to articulate the accumulated knowledge to the singular context in which the action takes place, considering other subjects involved, values, historical circumstances, etc<sup>25</sup>. Because health care is eminently relational<sup>26</sup>, the relevance of organic management to the SDC mission is noticed.

Finally, "education and communication in health" was included by the power to enable changes in care management by stimulating the praxis dynamics, relating to permanent education and popular education in health. Permanent education seeks to improve the educational method in health, considering the work process as an object of transformation, aiming to qualify services to meet the population needs<sup>27</sup>. Popular education in health is a social practice for health promotion, social control and empowerment, thus essential to care<sup>28</sup>. Although typically attributed to PHC, it is also relevant to the SDC, especially in partnership with PHC.

### **Matrix of Indicators**

The initial matrix was organized into components, criteria and indicators related to the attributes of the health services quality<sup>23</sup>; to quality in the perspective of responsiveness<sup>29</sup> and to qualification of work processes. However, the group discussion provided a reflection on the SDC mission, previously conceived, as expanding and qualifying the oral healthcare at medium complexity. Thus, the matrix was restructured, considering elements of the logical model (components/subcomponents/dimensions-resources, activities, products and results), plus the criteria where the proposed indicators were distributed.

In addition, the discussion stimulated the proposition of indicators to measure how much was the SDC/PHC interaction, understanding that it was essential to transcend the SDC physical facility, seeking sources of information in services in which the SDC interacts or should interact.

As for the initial matrix, there was a change in the scores assigned to indicators (S03, ET18, ET19, ET20, ET23) in the post-group evaluation. But this did not change the outcome, observed in the final matrix. The total of excluded indicators at the end of the validation process (n=39) and the respective justifications are shown in table 1.

**Table 1-** Indicators excluded from evaluation matrix of SDC and reasons for exclusion. Natal-RN, 2019.

CRITERION	CONSTRUCT/INDICATOR	REASON FOR EXCLUSION
<b>COMPONENT SAFETY</b>		
Immunization of Professionals	<p><b>S02.</b> Staff immunization (CD, ASB, TSB*)</p> <p>Ratio of the number of SDCs working in health care (CD, ASB, TSB) vaccinated against Hepatitis B; Measles; Mumps; Diphtheria; Tetanus and the number of unvaccinated professionals working in health care (x10).</p> <p>* For localities where yellow fever is endemic, to add this vaccine in the indicator.</p>	The other attributes indicators (S01, S03, S04 and S05), which dealt with aspects related to accident prevention (quantity and quality of the Personal and Collective Protective Equipment) and the occurrence of accidents would contemplate a causal relationship (inadequate prevention) and effect (number of accidents).
Biosafety	<p><b>S06.</b> Physical facilities biosafety.</p> <p>Ratio between the number of rooms that meet biosafety standards and the number of rooms that are not suitable for biosafety standards in the last 12 months (x10).</p>	
<b>COMPONENT EFFECTIVENESS</b>		
Professionals' technical-scientific knowledge and permanent education	<p><b>ET07.</b> Professional qualification of dentists who work at SDC.</p> <p>Proportion of CDs with improvement or specialization in the field compared to total number of CDs (x10).</p>	There is no requirement for the professionals to have a <i>Stricto Sensu</i> or <i>Latu Sensu</i> graduate degree to work in the SDC. Therefore, this indicator would not be relevant.
	<p><b>ET08.</b> Professional qualification of dentists who work at SDC.</p> <p>Proportion of CDs with improvement or specialization in the field compared to total number of CDs (x10).</p>	
	<p><b>ET09.</b> Participation of dentists in permanent education courses.</p> <p>Proportion of CDs that participated in a permanent education course (lectures, workshops, congresses...) in the last 12 months while working in SDC compared to the total number of CDs (x10).</p>	Indicator ET15 contemplates what these indicators are proposed to measure: periodicity of participation in typical activities of permanent education.
	<p><b>ET11.</b> ASB participation in permanent education course</p> <p>Proportion of the number of ASBs that participated in the last 12 months in a course or action of permanent education compared to the total number of ASBs working in the SDC (x10).</p>	
	<p><b>ET10.</b> ASB professional qualification</p> <p>Proportion of ASBs with certified oral health technical course compared to the total number of ASBs that work in the SDC (x10).</p>	Indicator ET15 would contemplate the perspective of permanent education. In addition, technical work may have been assigned as with an eminently mechanical character, characterizing it differently than praxis.
	<p><b>ET12.</b> Time of activity of the SDC manager/coordinator.</p> <p>Proportion of the number of years that the manager/coordinator works on the investigated SDC and the number of years of SDC existence (x10).</p>	The information about the experience in public services management could be given by the indicator ET 13.
Technical-scientific quality of	<p><b>ET17.</b> Technical-scientific quality of the care products- Endodontics:</p> <p>Proportion between the total number of endodontic repeated treatments performed in the last 12 months and the total number of endodontic treatments performed in this period (x100).</p>	- Difficulty in data collection, since it is necessary to contact the users and request their presence in the service to carry out the evaluation. Moreover, such a difficulty would be increased because of the need to wait some
	<p><b>ET18.</b> Technical-scientific quality of care products- Prosthetic oral rehabilitation:</p>	

	<p>Proportion between the number of conventional prostheses (mucosupported) inadequate according Brazilian criteria and the total number of prostheses made in the last 12 months (x100).</p> <p><b>ET19.</b> Technical-scientific quality of care products- Oral Surgery: Proportion of number of third molar surgeries performed without evidence of postoperative complications (alveolitis, paraesthesia, residual root) and total number of third molar surgeries performed in the last 12 months (x100).</p> <p><b>ET22.</b> Technical-scientific quality of care products- Implantology: Proportion between the number of implanted bone implants and the number of implants performed in the last 12 months (x10).</p>	<p>time from the intervention to conduct a research.</p> <p>- Possibly, users who would attend the return would be those dissatisfied with the rehabilitation, implying a selection bias, compromising the validity of the judgment on the quality of the products.</p> <p>- Need to decrease the interval for data collection from 12 to 06 or 03 months to enable a change in the timely work process in the face of unsatisfactory results. Because a time of 12 months would be a long interval to collect likely useful information to subsidize decision making.</p>
	<p><b>ET20.</b> Technical-scientific quality of care products- Stomatology: Proportion between the number of early diagnoses of oral cancer and the number of biopsies performed in the last 12 months (x10).</p> <p><b>ET21.</b> Technical-scientific quality of care products- Stomatology: Proportion between the number of potentially malignant lesions diagnosed and the number of biopsies performed in the last 12 months (x10).</p> <p><b>ET23.</b> Satisfaction of users regarding treatment.</p> <p>Proportion between the number of users satisfied with endodontic treatment and the total number of users satisfied with the treatment performed on the SDC in the last 12 months (x100).</p>	<p>Modifications were proposed in the indicator. However, even after these changes in the post-nominal matrix, these indicators did not meet the criteria for their permanence in the matrix.</p> <p>- Possibly, users who would attend the return would be those dissatisfied with the rehabilitation, implying a selection bias, compromising the validity of the judgment on the quality of the products.</p> <p>- Time for treatment quality evaluation (12 months) would be small for endodontic treatments (literature reports from 02 to 05 years of preservation) and long for timely decision making (ideal quarterly or semiannual evaluation).</p>
Daily difficulties related to oral	<p><b>ET24.</b> Difficulties reported before and after treatment in the SDC. Ratio between the number of users treated in the SDC who reported difficulties in eating, talking, smiling, studying/working, sleeping, maintaining habitual mood, performing oral hygiene and socializing due to a problem in the mouth, tooth or prosthesis after treatment performed on the SDC, and the number of users who reported these difficulties before treatment in the last 12 months (x100).</p>	<p>The inclusion of one more procedure to be performed by the professionals would hardly be effective, specifically the questioning about the difficulties to perform activities proper to the oral domain before and after treatment.</p>
Standardization of work processes	<p><b>ET25.</b> Follow-up of a clinical protocol by dentists</p> <p>Proportion between the number of CDs that declare to guide their clinical activities by protocols agreed by the staff that work in the SDC and the total number of CDs that work on the SDC (x10).</p>	<p>Instead of verifying the follow-up of clinical protocols agreed by the staff through the self-declaration of the professionals, it would be more important to verify the existence of the protocols themselves or to analyze the documents (reference and counter-reference sheets) that could indicate, more credibly, the use of these protocols. Self-declaration is very prone to bias, since the individual may not report how, in fact, he experiences his praxis.</p>
<b>COMPONENT USER-CENTERED CARE</b>		
Reception	<p><b>ACP27.</b> User satisfaction with the way the SDC team (CD and ASB) treated him or her.</p> <p>Ratio between the number of satisfied users and the number of dissatisfied users with the service of the SDC team in the last 12 months (x100).</p>	<p>- The user satisfaction with the team care as a way of assessing the reception would not be adequate because it is quite susceptible to bias.</p> <p>- It includes information assessed by the ET 23 indicator.</p> <p>- The source for capturing the data would not be relevant.</p>
<b>COMPONENT EFFICIENCY</b>		

Exclusivity of employment contract	<p><b>EC36.</b> Relationship between the SDC exclusive service and the achievement of agreed goals</p> <p>Ratio between the number of professionals working exclusively at the SDC and the number of professionals achieving the agreed productivity goals (x10).</p>	The measurement of this indicator would not be valid, since professionals would hardly work exclusively with the CEO. Therefore, if the purpose is to check if there is wastage of time to achieve the goals resulting from the absence of professionals, the crossing of the indicators EC33 (proportion of the hours worked by the ASB and dentist) and the EC 44 (proportion of the goals of productivities met by specialty in relation to the total agreed targets) would enable this information.
Autonomy	<p><b>EC37.</b> Ratio between the autonomy of care professionals (CD) and the achievement of agreed goals.</p> <p>Ratio between the number of CDs satisfied with their autonomy and the number of CDs that reach the agreed goals (x10).</p>	The PT64 indicator could potentially provide the same information (satisfaction with autonomy to perform praxis). In addition, this indicator would be better suited to the "qualification of health work processes" component.
Activities cessation	<p><b>EC39.</b> Cessation or interruption of care due to lack of consumables. Proportion of the number of days stopped in the last 12 months due to lack of consumables and the total number of working days in the year (x10).</p> <p><b>EC40.</b> Cessation or interruption of care due to lack of instruments. Proportion of the number of days stopped in the last 12 months due to lack of instruments and the total number of working days in the year (x10).</p>	A single indicator could see if there was any paralysis in the CEO's activities. It was argued that the most important thing is to find out if the lack of structure, whether of equipment or materials (inputs and instruments), made the service impossible and thus made it difficult to reach the productivity goals.
Productivity	<p><b>EC43.</b> Procedures executed by the SDC.</p> <p>Ratio between the number of PHC procedures performed in the SDC in the last 12 months compared to the number of secondary care procedures performed in the same period of time (X100).</p>	One evaluator stated that he did not understand the proposal of the indicator. Then he gave score 5, thus causing the interquartile distance of the indicator to be greater than 2, being excluded from the final matrix.

**COMPONENT EQUITY**

Geographic location	<p><b>EQ48.</b> Universal access to care, regardless of the municipality of residence.</p> <p>Ratio between the number of consultations performed in individuals residing in the municipality where the SDC is located and the number of consultations to individuals residing in other municipalities in the last 12 months (x100).</p>	Invalid indicators, because instead of containing questions related to equity, indicated the profile characterization of SDC users. In addition, the group stated that, in fact, assistance in the SDC is not based on equity, but rather on PHC. In this sense, the ideal was to verify the health profile of PHC and thus, to verify if the individuals referred to the SDC were those of greater social vulnerability or with a greater likelihood of worsening their condition, if they did not obtain a timely care.
Gender	<p><b>EQ49.</b> Universal access to care, regardless of sex;</p> <p>Ratio between the number of consultations performed in men (males) and the number of consultations in women (females) in the last 12 months.</p>	
Life cycles	<p><b>EQ50.</b> Universal access to care, regardless of life cycle. Ratio between the number of consultations performed on children and the number of consultations performed in the SDC in the last 12 months.</p> <p><b>EQ51.</b> Universal access to care, regardless of life cycle. Ratio between the number of consultations performed on elderly and the number of consultations performed in the SDC in the last 12 months.</p>	
Socioeconomic condition	<p><b>EQ52.</b> Universal access to care regardless of socioeconomic status.</p> <p>Ratio between the number of consultations performed on individuals participating in government income redistribution programs and the number of consultations performed in the last 12 months.</p>	

**COMPONENT RESPONSIVINESS**

Orientation to the user	<b>R53.</b> Elapsed time for return consultations. Ratio between the number of returns scheduled within 15 days and the number of returns scheduled for more than 15 days in the last 12 months ( $\times 100$ ).	Difficulty reading the indicator.
<b>COMPONENT QUALIFICATION OF WORK PROCESS</b>		
Related technologies	<b>PT60.</b> Time the dentist works in the SDC under investigation. Proportion between the number of CDs that have worked for the SDC under investigation for at least 5 years and the total number of CDs working for the SDC under investigation.	It was argued that working time on the SDC for more than five years would not necessarily characterize the bond to the detriment of labor patronage.
	<b>PT61.</b> Time the ASB works in the SDC under investigation. Proportion between the number of ASBs that have worked for the SDC under investigation for at least 5 years and the total number of ASBs working for the SDC under investigation.	
	<b>PT66.</b> Professional participation (CD, ASB and TSB) in the planning process. Proportion of the number of planning meetings in which CDs and ASBs participated in the last 12 months and the total number of planning meetings that occurred in this period ( $\times 10$ ).	Redundant indicator, because the same information is collected by the indicator PT67.
Financial autonomy	<b>PT70.</b> Representativeness of financial figures from the PIAQ-SDC. Proportion between the amount of SDC monthly expenses (in "Reais") covered by financial resources from the PIAQ-SDC compared to the total amount of SDC expenses (in "Reais") in the last 12 months.	The SDC economic sustainability exceeds the scope of management, therefore such issue goes beyond its governance.
	<b>PT71.</b> Representativeness of the financial values coming from the Care Network for the Person with Disabilities. Proportion between the value of SDC monthly expenses (in "Reais") covered by the incentives for joining the Care Network for the Person with Disabilities compared to the total amount of SDC expenses (in "Reais") in the last 12 months.	
Planning as management tool	<b>PT72.</b> Organization of services by planning. Proportion between the number of planning meetings held in the last 12 months and the total number of meetings held in this period ( $\times 10$ ).	The same information could be collected by indicator PT67.
	<b>PT73.</b> Conducting evaluation practices to support planning. Proportion between the number of evaluation meetings held in the last 12 months and the total number of meetings held in this period ( $\times 10$ ).	It enables information, the number of evaluation meetings held, which could be collected by PT67.
Filling medical records	<b>PT77.</b> Completion of medical records by the professional (CD, ASB, TSB). Proportion between the number of inadequately filled productivity records and the total number of completed records in the last 12 months ( $\times 100$ ).	- Change of opinion as to the pertinence of composing the evaluation matrix after second individual evaluation.
Working relationships characteristics	<b>PT78</b> Type of employment contract Proportion between number of servers (administrative, CD, ASB, TSB) with statutory contract or CLT contract and total number of servers working in the SDC ( $\times 10$ ).	- In order to verify if the professionals with stable employment are the ones that produce the most, it would be necessary to add other data to make such statement. For the contract itself does not necessarily give information about professional commitment.
Professionals remuneration	<b>PT 79</b> Satisfaction of professionals (CDs) regarding remuneration Proportion between the number of CDs satisfied with the remuneration and the number of CDs acting on the SDC ( $\times 10$ ).	It brings the same information of EC 35 (to check the satisfaction of the professionals with the work and with that their degree of commitment).

\*CD=dentistry/ ASB= Oral health assistant/ TSB= Oral health technician

Source: Machado et al (2015).

Regarding validated indicators to compose the evaluation matrix, the importance of the protocols for health care was recognized, which, despite its

characteristic singularity, it presents routine procedures that can be standardized. The Manual of Specialties in Oral Health<sup>13</sup> reports clinical and regulatory protocols specifying instruments necessary for clinical assistance in dental specialties, indicating ways of performing clinical procedures and clarifying situations pertinent to referencing and counter-referencing of individuals.

However, it is necessary to periodically agree and update these protocols to maximize chances of legitimation and use<sup>30</sup>. Thus, under the coordinating principle of PHC, they should be discussed with the participation of professionals of this level of care. However, the manual does not mention PHC/SDC activities, assuming perhaps an implicit interaction. This reinforces the bias of the SDC assistance character and disarticulation with other services, reinforcing the search for strategies to apprehend the unique mission of providing integral health care, although each service has a specific mission.

Specifying SDC organizational values, as in PHC, emphasizing the organization's philosophy, directing the behaviors of its members and promoting well-being at work would be a way<sup>31,32</sup>. Well-being at work is related to satisfaction, involvement with tasks, and affective commitment to work organization. As for the affective commitment, the satisfaction with the interpersonal relations at work that positively interferes in the effectiveness of principles such as honesty, equality, organization transparency when disclosing information, responsibility, commitment and respect stands out<sup>33</sup>.

Concerning work satisfaction, the precariousness of the environment is a factor related to the reduction of the worker's capacity, leading to occupational diseases and work accidents<sup>34</sup>. Excessive workload, overtime, lack of workers, equipment, lighting, non-observance of ergonomic norms and biosafety are factors of precariousness.

Noronha<sup>34</sup> when verifying impacting factors on dentists' quality of life of a SDC, identified dissatisfaction with remuneration, safety and hygiene at work as relevant factors. Thus, remuneration is a motivational feature at work environments, but limited to career plans in SUS, and there is a need for category entities to claim the implementation of these career plans in public administration. As for safety and

hygiene, investments are needed to improve facilities; Purchase and distribution of personal protective equipment, other equipment and consumables.

Given these assumptions, the final matrix contains criteria related to satisfaction with interpersonal relationships at work, with remuneration, rationalization of resources, sufficiency and professional qualification, quantity and quality of inputs and equipment, environment and safety.

Economic issues are essential not only for the performance of professionals, but for the operation of the service itself. Thus, it is necessary to evaluate the municipality's governance in managing this service, above all, in discussions about decentralization in small municipalities with low governance potential.

In this sense, an analysis of the development of the National Oral Health Policy (NOHP), from the perspective of federal funding, concluded that, although federal resources allocated to the implementation and costing of actions stated in the NOHP represent an important stimulating factor for adherence of local managers to this policy, these resources alone are not sufficient<sup>35</sup>. There are additional costs related to the maintenance of specific equipment, instruments, and specific consumables, which are known to be expensive. To outline this limitation, the strategy is to establish municipal consortia<sup>36</sup>, as well as solidarity in the costing by the states and municipalities.

Another valid point was to verify the use of medical records by health care professionals, since this could increase the chance of evaluations, planning, monitoring, audits and work organization based on information from the territory. In this sense, the type of medical record is important, and the computerized one is the best for data management to carry out the described activities. Nevertheless, the Brazilian government created e-SUS, a strategy to computerize the SUS, implanting, among other issues, electronic records<sup>37</sup>.

However, the use of medical records for the purposes described, whether electronic or paper, is still limited. Because two situations are common: non-use or use with failures (unregistered records, no fill, erasures). Regarding non-use, studies point out that important information is not always recorded by dentists due to the time spent



and the understanding of being an unnecessary bureaucratic act, denoting ignorance of the ethical and legal implications and the barrier to the work organization itself<sup>38</sup>. Regarding failures, studies reported, when assessing the readability, completeness and application of the recommendations for reference to the SDC, the need to discuss the importance of the medical record for the work process<sup>39</sup>.

The filling of medical records interferes with a widely publicized mechanism for the implementation of a health care network, reference and counter-reference<sup>40</sup>. Thus, the analysis of medical records is a common method to investigate issues related to this process. An example is the investigation by medical records of the average number of days and the average number of consultations to complete treatment, from the date of referral to the SDC to completion at the Basic Health Unit. The analysis of these variables highlighted the evasion of patients during treatment in the SDC. This evasion would be linked to the time taken to start treatment, as well as the need for several consultations to complete the case. In turn, the user, through relief of the painful symptoms and the costs with displacements, would give up the treatment<sup>41</sup>.

Therefore, reducing the time to access SDC and the number of consultations spent on treatment would be a way to provide greater ability to solve problems. As for the consultations, time could increase in specialties where there is no need for interval between the clinical sessions<sup>42</sup>. As for the opportunity of access, it would be feasible to deploy appointment centers, using equity criteria to prioritize access<sup>43,44</sup>. In the context of equity, the evaluation matrix of the current study provides indicators to verify if there are strategies to prioritize care of individuals with greater risks of worsening oral health status.

Considering the flow of reference and counter-reference, quality of service and access, it was observed that customer absence associated to access difficulties due to bad signaling of the reference unit, centralization of secondary services and lack of information of the users on basic units about the location of the reference unit are factors that impair the SDC performance<sup>45</sup>. Thus, simple actions as improving signaling and communication would imply less absence and resource optimization. In line with these issues, the instrument built in this study includes, respectively,

strategies for reducing absenteeism (scheduling of appointments, waiting list, reduction in time for user access and return) and indicators of resource rationalization.

According to the discussions carried out so far, the relevance of accessibility is inferred<sup>45</sup>. Accessibility to specialized care has obstacles such as: geographical distance from the SDC to the residence of the user; lack and cost of transportation; absence of epidemiological data for agreement and appointments offer at night<sup>42</sup>. In order to verify access barriers in geographic distance, the matrix of this study contains an indicator of the user profile assisted in the SDC.

The matrix validation was in December 2013. As for the indicators of popular education, they approach the quantitative rather than the type of activity developed. Thus, in order to avoid dissonance with the theoretical framework of this study, it is necessary to emphasize the empowering nature of these practices among oral health teams<sup>28</sup>.

There was concentration on the component directly related to the mission of the SDC and contemplation of different elements needed for an evaluation. The emphasis on the mission depends on the experts' discussions and the proposed modeling. Studies show that disarticulation with PHC is a critical issue to SDC performance<sup>46,47,48,49</sup>. In this sense, the implementation of SDC in municipalities where PHC is not adequately structured is not recommended<sup>46</sup>.

The validated indicators are in the evaluation matrix (table 2), the evaluation tool itself, allowing classification of performance by component, enabling to identify critical issues. Criteria and indicators of the matrices are congruent to the factors potentially related to the SDC performance<sup>46</sup>. In this sense, the small variation of the outcome on which indicators of those initially proposed would remain in the matrix was expected.

**Table 2-** Evaluation Matrix for assessing SDC performance with indication of maximum score. Natal-RN, 2019.

Components	Subcomponents	Criteria	Indicators	Source	Standard	Maximum expected score	Score description or cutoff	Observed score/Assigned score	Evaluation
Support to Primary Health Care (maximum score: 20 points)	Offers of services of medium complexity and technological density (maximum score: 11 points)	User profile	PT82. Proportion of the number of people living in rural areas served by the SDC and the total number of people served in the last 12 months (x100).	Consultations records	Score to be agreed by the SDC staff	01	0-35% of standard - 0.25 points; 36-59% of standard - 0.5 points; 60- 79% of standard - 0.75 points; 80-100% of standard - 1.0 point.		
		Adjustment to professionals of health care	EC31. Ratio of the number of hours worked and CDs* hired to the SDC in the last 12 months.	Work record analysis.	01	01	0-35% of standard - 0.25 points; 36-59% of standard - 0.5 points; 60- 79% of standard - 0.75 points; 80-100% of standard - 1.0 point.		
			EC32. Ratio between the number of ASBs* and the number of dental equipment in the SDC for the last 12 months (x10).	Work record analysis.	01 ASB for each dental equipment	01	0-35% of standard - 0.25 points; 36-59% of standard - 0.5 points; 60- 79% of standard - 0.75 points; 80-100% of standard - 1.0 point.		
			EC33. Proportion of the total hours worked weekly by the ASBs and the number of hours worked by the CDs weekly (x10).	Work record analysis.	01	01	0-35% of standard - 0.25 points; 36-59% of standard - 0.5 points; 60- 79% of standard - 0.75 points; 80-100% of standard - 1.0 point.		
		Amount of consumables /instruments /equipment	EC42. Proportion between the number of CDs satisfied with the quantity of consumables/instruments /equipment in the last 12 months and the total number of CDs working at the SDC (x10).	Primary data collected by dialogical mechanisms	Score to be agreed by the SDC staff	01	0-35% of standard - 0.25 points; 36-59% of standard - 0.5 points; 60- 79% of standard - 0.75 points; 80-100% of standard - 1.0 point.		
		Products quality (consumables and instruments)	ET16. Proportion between the number of professionals (CDS, ASBs, TSB*) satisfied with the quality of the consumables/ instruments and the number of professionals who have	Interview / questionnaire or other means of collecting the opinion of professionals.	Score to be agreed by the SDC staff	01	0-35% of standard - 0.25 points; 36-59% of standard - 0.5 points; 60- 79% of standard - 0.75 points; 80-100% of standard - 1.0 point.		

		worked in the SDC for the last 12 months (x10).					
	Standardization through clinical protocols	<u>Existence of protocol to guide clinical activities.</u> ▪ Yes (1) / No (0)	Primary data collected through documentary analysis.	YES	YES	No- 0 point Yes- 1 point	
	Problems in physical structure and/or equipment	EC38. Proportion of number of days stopped in the last 12 months due to maintenance / repair of equipment and total number of working days in the year (x10).	Log book.	Score to be agreed by the SDC staff	1	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.	
		EC41. Proportion of the number of days stopped in the last 12 months due to the lack of equipment provided for in Order 599/2006 and the total number of working days in the year (x10).	Log book.	Score to be agreed by the SDC staff	1	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.	
	Interaction between SDC and PHC professionals	<u>Degree of interpersonal interaction between SDC and PHC professionals.</u> ▪ (1) High ▪ (0.5) moderate ▪ (0.25) low ▪ (0) none.	Primary data collected by dialogical mechanisms.	(1)	(1)	<b>High</b> -1 point; <b>Moderate</b> - 0.5 points; <b>Low</b> - 0.25 points; <b>None</b> - 0 point.	
	Effectiveness	<u>Proportion of the number of molar and premolar endodontics performed in the SDC in the last 12 months compared to the total number of endodontics performed in this period (x100).</u>	Ambulatory Production Bulletin.	Score to be agreed by the SDC staff ou normatizado de acordo com o preconizado em portaria ministerial específica	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.	
Counter-reference and	Standardization through regulation protocols	<u>Existence of protocol to guide regulatory actions.</u> ▪ Yes (1) / No (0)	Document analysis.	YES	YES	No- 0 point Yes- 1 point	
		ET26. Proportion of the number of CDs declaring referrals (reference and counter-references) by protocols agreed by the SDC team and the total	Primary data collected by interview or other dialogical mechanisms.			<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points;	

		number of CDs working on the SDC (x10).				<b>80-100% of standard</b> - 1.0 point.		
	Activities of regulation of health care access	<b>OA28.</b> Proportion of the number of people cared by the SDC and the number of people referred by PHC in the last six months to the SDC (x100).	SDC book log and consultation to PHC reference forms.	Score to be agreed by the SDC staff	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		
		<b>OA29.</b> Proportion between the number of users whose attendance occurred through reference with reference form and the total number of users attended in the last 6 months (x100).	Consultation records and reference forms.	Score to be agreed by the SDC staff	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		
		<b>OA30.</b> Proportion between the number of users who were counter-referenced to PHC and the total number of users attendend in the last 6 months (x100).	Consultation records and conter-reference forms.	01	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		
	Professionals for matrix support	<u>SDC professionals who provide matrix support to ESF.</u> ▪Yes (1) /No (0)	Activities document analysis.	YES	YES	<b>No-</b> 0 point <b>Yes-</b> 1 point		
	Integrated therapeutic Project	<u>Mechanisms used for matrix support.</u> <u>(0.5) Direct referral without reference forms.</u>  <u>(1) Implementation of integrated therapeutic projects (ITP) through the integration of human and structural resources of the SDC and PHC.</u>	Activities document analysis.	(1)	(1)	<b>Referrals-</b> 0.5 points <b>PTI-</b> 1 point		
	Integrated planning	<u>Meetings/ Situation Room with the presence of professionals from the SDC and PHC.</u> ▪Yes (1)/ No (0)	Activities document analysis.	YES	YES	<b>No-</b> 0 point <b>Yes-</b> 1 point		
	Integrated planning meetings	<u>Proportion of the number of planning/ evaluation and/or monitoring meetings held with the presence of SDC and PHC professionals in the past 12 months compared to the total number of planning/ evaluation and/or monitoring meetings held during this period.</u>	Activities document analysis.	Score to be agreed by the SDC staff	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		

Matrix Support (maximum score: 04 points)

Source: Machado et al (2014) based in Samico et al (2010) and Bezerra et al (2012).

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Evaluation, planning and monitoring (maximum score: 09 points)</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Productivity goals (maximum score: 06 points)</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Work practices</p>	Medical records	<u>Type of medical record used in the service.</u> <u>(0) Not used;</u> <u>(0.5) Handwritten;</u> <u>(1.0) Computerized.</u>	Direct analysis of medical record.	(1)	(1)	<b>Not used</b> - 0 point; <b>Handwritten</b> - 0.5 points. <b>Computerized</b> - 1.0 point.		
	Knowledge about productivity goals by the health care professionals	<b>PT75.</b> Proportion of the number of SDC professionals (CD, ASB, TSB) who claim to know the productivity goals set forth in the specific Ministerial Order and the total number of professionals working in the SDC (x10).	Primary data collected by dialogical mechanisms.	01	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		
	Professional participation on the goals follow-up	<b>PT76.</b> Proportion of the number of professionals (CD, ASB, TSB) of the SDC who affirm that they monitor productivity goals established in the Ministerial Order or those elaborated by management and the total number of professionals working in the SDC (x100).	Primary data collected by dialogical mechanisms.	01	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		
	Reached goals	<b>EC44.</b> Proportion between the number of goals met by specialty in the last 12 months and the total number of goals established by ministerial order for each specialty (x100).	Ambulatory Production Bulletin.	01	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		
	Reached productivity	<b>EC45.</b> <i>Ratio between the number of calls in the 01-month period and the number of hours worked for the CDs this month.</i>	Book log analysis of professionals' work record.	Score to be agreed by the SDC staff	-	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		
	Quality and servisse certification	<b>PT74.</b> Ratio between the number of evaluation and monitoring goals established by management and the number of positive evaluations in the PIAQ-SDC.	Reports and data analysis of PIAQ-SDC.	Score to be agreed by the SDC staff	-	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		
	Professional work autonomy	<b>PT64.</b> Ratio among the number of satisfied professionals in the last 12 months with their autonomy to evaluate, plan and perform actions and the number of dissatisfied professionals (x10).	Primary data collected by dialogical mechanisms.	Score to be agreed by the SDC staff	-	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		

The initial configuration of the matrix led to the proposition of unnecessary indicators for gauging the same information from others, thus compromising an

		<b>PT67.</b> Proportion between the number of ASBs and CDs that participated in planning meetings in the last 12 months and the total number of those professionals working in the SDC (x10).	Analysis of minutes of meetings and analysis of planning and reporting documents.	01	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		
	Audits conduction	<u>Type of audit instituted in the service .</u>  <ul style="list-style-type: none"> <li>▪(1) <u>Scheduled audit with preventive character;</u></li> <li>▪(0.75) <u>Special audit with preventive character;</u></li> <li>▪(0.5) <u>Scheduled audit with punitive character;</u></li> <li>▪(0.25) <u>Special audit with punitive character;</u></li> <li>▪ (0) <u>Does not perform.</u></li> </ul>	Activities document analysis.	(1)	(1)	<b>Scheduled audit with preventive character</b> - 1 point; <b>Special audit with preventive character</b> - 0.75 points; <b>Scheduled audit with punitive character</b> - 0.5 points; <b>Special audit with punitive character</b> - 0.25 points; <b>Does not perform</b> - 0 point.		
<b>User-centered care (maximum score: 11 points)</b>  <b>Responsiveness (maximum score: 07 points)</b>	Ambience	<b>R54.</b> Ratio between the number of environment-related factors under inadequate conditions under the PIAQ-SDC and the number of factors under appropriate conditions.	Visual inspection with reference to the PIAQ-SDC manual to verify that the situation found is or is not in accordance with the specifications.	Score to be agreed by the SDC staff	-	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		
	Compromise	<b>PT57.</b> Proportion between the number of CDs satisfied in the last 12 months with the interpersonal relationships established with the user and the total number of CDs from the SDC (x10).	Primary data collected by dialogical mechanisms.	01	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		
	Fast consultation	<u>Ratio between the number of users whose time interval between referral to the SDC and the beginning of treatment in the last 6 months occurred in up to 15 days and the number of users whose time interval exceeded 15 days in this period (x100)</u>	Checking at reference sheets and medical records.	Score to be agreed by the SDC staff	-	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.		
	Communication	<u>Existence of an ombudsman mechanism (meetings, suggestion box, e-mail receipt) to capture the user's perception about the care provided by the SDC.</u>  <ul style="list-style-type: none"> <li>▪<u>Yes (1) / No (0)</u></li> </ul>	Direct observation of the mechanism.	YES	YES	<b>No-</b> 0 point <b>Yes-</b> 1 point		

Patient safety (maximum score : 04 points)	Equity	<u>Existence of criteria for prioritizing the treatment of users at risk.</u> ▪Yes (1)/ No (0)	Document analysis of records of work processes practiced.	YES	YES	No- 0 point Yes- 1 point		
	Absenteeism decrease	EC47. Proportion between the number of people who attended the scheduled service in the month and the number of people who were scheduled for service in the month (x100).	Book of appointment schedules and Book attendance log.	Score to be agreed by the SDC staff	01	0-35% of standard – 0.25 points; 36-59% of standard – 0.5 points; 60- 79% of standard – 0.75 points; 80-100% of standard – 1.0 point.		
		EC46. Proportion between the number of patients attended monthly and the monthly number of vacancies available (x100).	Book log.	Score to be agreed by the SDC staff	01	0-35% of standard – 0.25 points; 36-59% of standard – 0.5 points; 60- 79% of standard – 0.75 points; 80-100% of standard – 1.0 point.		
	Amount of PPE and CPE	S04. Proportion between the number of CDs satisfied with the PPE/CPE quantity and the number of CDs working on the SDC in the last 03 months (x10).	Interview / questionnaire or other means of collecting the opinion of professionals.	Score to be agreed by the SDC staff	01	0-35% of standard – 0.25 points; 36-59% of standard – 0.5 points; 60- 79% of standard – 0.75 points; 80-100% of standard – 1.0 point.		
	Quality of PPE and CPE	S05. Proportion between the number of CDs satisfied with the PPE/CPE quality and the number of CDs that have been in the SDC for the last 03 months. (x10).	Interview / questionnaire or other means of collecting the opinion of professionals.	Score to be agreed by the SDC staff	01	0-35% of standard – 0.25 points; 36-59% of standard – 0.5 points; 60- 79% of standard – 0.75 points; 80-100% of standard – 1.0 point.		
	Work accidents frequency	S01. Proportion between the number of work-related accidents at the SDC involving the professional and the user, and the number of records of appointments made to the SDC in the last 3 months (x100).	Book log.	Score to be agreed by the SDC staff	01	0-35% of standard – 0.25 points; 36-59% of standard – 0.5 points; 60- 79% of standard – 0.75 points; 80-100% of standard – 1.0 point.		
	Complaints regarding Negligence, Imprudence, or Malpractice Related to SDC service.	S03. Proportion of the number of complaints records indicating the worsening of the user health situation that may be related to the negligence, recklessness and/or malpractice of the professionals and the total number of records of complaints in the last 12 months (x100).	Book log/ Ombudsman mechanisms / audit mechanisms	Score to be agreed by the SDC staff	01	0-35% of standard – 0.25 points; 36-59% of standard – 0.5 points; 60- 79% of standard – 0.75 points; 80-100% of standard – 1.0 point.		

essential perspective of the evaluation process, the decision-making in proper time. However, content validation aims, among other issues, to overcome this fragility.



<b>Organic Management (maximum score: 17 points)</b> <b>Financial Management</b> Work process management (maximum score: 06 points)	Management capacity and ability	<u>Professional training of SDC manager / coordinator.</u> ▪(1) Graduation in the area of management; ▪(0.5) Graduation in the health area; ▪(0.25) Graduation in another area; ▪ (0) Not graduated.	Updated information on SDC meetings.	(1)	(1)	<b>Graduation in the area of management - 1 point;</b> <b>Graduation in the health area - 0.5 points;</b> <b>Graduation in another area - 0.25 points;</b> <b>Not graduated - 0 point.</b>		
		<b>ET13.</b> Proportion between the number of years performing public management activities and the number of years serving as a public server (x10).	Updated information on SDC meetings.	Score to be agreed by the SDC staff	01	<b>0-35% of standard - 0.25 points;</b> <b>36-59% of standard - 0.5 points;</b> <b>60- 79% of standard - 0.75 points;</b> <b>80-100% of standard - 1.0 point.</b>		
	Administrative support team	<u>Presence of at least 01 receptionist, 01 general service assistant and 01 administrative assistant per SDC shift.</u> ▪Yes (1)/ No (0)	Employee work record.	YES	YES	<b>No- 0 point</b> <b>Yes- 1 point</b>		
	Characteristics of work relationships	<u>Type of employment relationship of the manager / coordinator.</u>  (1) Statutory server (0.5) CLT Server (0.25) Special scheme / Temporary contract (0) Special regime / Commissioned	Human resources registration analysis.	(1)	(1)	<b>Statutory server - 1 point;</b> <b>CLT Server - 0.5 points;</b> <b>Special scheme / Temporary contract - 0.25 points;</b> <b>Special regime /Commissioned - 0 point.</b>		
		<b>PT62.</b> Perception of the manager / coordinator about the degree of autonomy to plan and execute actions. •Degree of autonomy (low, moderate, high).	Primary data collected by dialogical mechanisms.	ALTO	ALTO	<b>High- 1 point;</b> <b>Moderate- 0.5 points;</b> <b>low- 0 point.</b>		
	Co-management	<b>PT65.</b> Ratio between the number of actions implemented by the CDs and ASBs and the number of actions implemented by the SDC manager / coordinator in the last 12 months (x10).	Analysis of minutes of meetings and analysis of planning and reporting documents.	Score to be agreed by the SDC staff	-	<b>0-35% of standard - 0.25 points;</b> <b>36-59% of standard - 0.5 points;</b> <b>60- 79% of standard - 0.75 points;</b> <b>80-100% of standard - 1.0 point.</b>		
	Professional remuneration	<b>EC35.</b> Ratio between the number of CDs satisfied with the remuneration and the number of CDs that reached the agreed production targets (x10).	Ombudsman mechanisms to collect the opinion of professionals and consult the individual production record of each professional.	Score to be agreed by the SDC staff	-	<b>0-35% of standard - 0.25 points;</b> <b>36-59% of standard - 0.5 points;</b> <b>60- 79% of standard - 0.75 points;</b> <b>80-100% of standard - 1.0 point.</b>		

Finally, we sought to overcome the benchmark of assessing SDC by productivity goals using indicators such as Global Goal Compliance (GGC)<sup>50,51,52,53,54,55</sup>

		<b>PT80.</b> Proportion between the number of ASBs satisfied with the compensation and the number of ASBs that work on the SDC (x10).	Primary data collected by dialogical mechanisms.	Score to be agreed by the SDC staff	01	<b>0-35% of standard</b> – 0.25 points; <b>36-59% of standard</b> – 0.5 points; <b>60- 79% of standard</b> – 0.75 points; <b>80-100% of standard</b> – 1.0 point.		
		<b>PT81.</b> Proportion between the number of TSBs satisfied with the remuneration and the number of TSBs working on the SDC.	Primary data collected by dialogical mechanisms.	Score to be agreed by the SDC staff	01	<b>0-35% of standard</b> – 0.25 points; <b>36-59% of standard</b> – 0.5 points; <b>60- 79% of standard</b> – 0.75 points; <b>80-100% of standard</b> – 1.0 point.		
		<b>PT63.</b> Degree of satisfaction of the manager / coordinator regarding remuneration. ▪Satisfied (1)/Dissatisfied (0)	Primary data collected by dialogical mechanisms.	(1)	(1)	<b>Satisfied-</b> 1 point; <b>dissatisfied-</b> 0 point.		
	Resources for SDC expenses	<b>PT68.</b> Proportion of the SDC monthly expenses (in “Reais”) covered by financial resources from the municipal counterpart by the total value of SDC expenses (in “Reais”) in the last 12 months.	Analysis of the registry of the administrative office of the Municipal Health Department.	Score to be agreed by the SDC staff	01	<b>0-35% of standard</b> – 0.25 points; <b>36-59% of standard</b> – 0.5 points; <b>60- 79% of standard</b> – 0.75 points; <b>80-100% of standard</b> – 1.0 point.		
		<b>PT69.</b> Proportion of the SDC monthly expenses (in “Reais”) covered by financial resources derived from the Federal incentive normalized in specific Order compared to the total value of SDC expenses (in “Reais”) in the last 12 months.	Analysis of the records of the administrative office.	Score to be agreed by the SDC staff	01	<b>0-35% of standard</b> – 0.25 points; <b>36-59% of standard</b> – 0.5 points; <b>60- 79% of standard</b> – 0.75 points; <b>80-100% of standard</b> – 1.0 point.		
	Work motivation mechanisms	<b>EC34.</b> Ratio between the number of professionals who receive some type of salary bonus or symbolic compensation and the number of professionals who have met the production goals agreed by the team in the last 6 months (x10).	Analysis of the record of human resources office and consultation of the individual production record of each professional.	Score to be agreed by the SDC staff	-	<b>0-35% of standard</b> – 0.25 points; <b>36-59% of standard</b> – 0.5 points; <b>60- 79% of standard</b> – 0.75 points; <b>80-100% of standard</b> – 1.0 point.		
	Satisfaction with interpersonal relationships	<b>PT55.</b> Proportion of the number of satisfied CDs in the last 12 months with the interpersonal relationships established by the work team and the total number of CDs of the SDC (x10).	Primary data collected by dialogical mechanisms.	Score to be agreed by the SDC staff	01	<b>0-35% of standard</b> – 0.25 points; <b>36-59% of standard</b> – 0.5 points; <b>60- 79% of standard</b> – 0.75 points; <b>80-100% of standard</b> – 1.0 point.		
	Satisfaction with the manager's ability to communicate	<b>PT56.</b> Proportion between the number of satisfied CDs in the last 12 months with the dialogue established with the management/	Primary data collected by dialogical mechanisms.	Score to be agreed by the SDC	01	<b>0-35% of standard</b> – 0.25 points; <b>36-59% of standard</b> – 0.5 points; <b>60- 79% of standard</b> – 0.75 points;		

People management (maximum score: 05 points)

	within the facility	coordination and the total number of CDs of the SDC (x10).		staff		<b>80-100% of standard</b> - 1.0 point.						
	Intrapersonal management skills	<i>PT58. Degree of satisfaction of the manager / coordinator with the interpersonal relationships established during the work practice.</i> ▪Satisfied (1)/Dissatisfied (0)	Primary data collected by dialogical mechanisms.	(1)	(1)	<b>Satisfied</b> - 1 point; <b>Dissatisfied</b> - 0 point.						
		<i>PT59. Degree of satisfaction of the manager / coordinator with the communication channels established with the team for the operation of the service.</i> ▪Satisfied (1)/Dissatisfied (0)	Primary data collected by dialogical mechanisms.	(1)	(1)	<b>Satisfied</b> - 1 point; <b>Dissatisfied</b> - 0 point.						
Education and Communication in Health ( maximum score : 06 points)	Permanent education activities at the SDC	ET15. Proportion of the number of courses and actions aimed at permanent education (capacitation, training, technical-scientific updates) of SDC professionals in the last 12 months and the number of courses and actions directed at permanent education in the last 5 years (x10).	Book log.	Score to be agreed by the SDC staff	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.						
			<u>Existence of periodic training to discuss and evaluate reference protocols and Counter-reference.</u> ▪Yes (1)/No (0)				Activities document analysis.	(1)	(1)	<b>Yes</b> - 1 point; <b>No</b> - 0 point.		
			<u>Existence of periodic training to discuss and evaluate clinical protocols.</u> ▪Yes (1)/No (0)				Activities document analysis.	(1)	(1)	<b>Yes</b> - 1 point; <b>No</b> - 0 point.		
	Number of professionals participating in permanent education activities	ET14. Proportion of the number of permanent education courses conducted by the manager / coordinator in the last 12 months compared to the number of permanent education courses offered by the state or municipality in the last 12 months (x10).	Updated information on SDC meetings and registration of permanent education courses for the municipality and State.	Score to be agreed by the SDC staff	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.						
	Addictions of popular education in health	<u>Proportion of the number of popular health education actions developed in partnership with SDC / PHC compared to the total number of popular health education actions carried out by PHC in the last 12 months (x10).</u>	Updated information on SDC and PHC integrated meetings.				Score to be agreed by the SDC staff	01	<b>0-35% of standard</b> - 0.25 points; <b>36-59% of standard</b> - 0.5 points; <b>60- 79% of standard</b> - 0.75 points; <b>80-100% of standard</b> - 1.0 point.			
Popular Education												

		<u>Number of popular health education actions taken in the SDC or by the SDC in the last 12 months.</u>	Book log.	Score to be agreed by the SDC	-	0-35% of standard - 0.25 points; 36-59% of standard - 0.5 points; 60- 79% of standard - 0.75 points; 80-100% of standard - 1.0 point.		
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**Identifying evaluation matrix elements:** *Component:* Keywords that aggregate a set of activities from the logical model / **Criterion:** Attribute of the structure, process, or result used to measure the components. **Identification of modified indicators, proposed by the specialists and present in the initial matrix:** *Font in italics:* modified indicators; *Underlined font:* indicators proposed by the experts. *Indicators preceded by codes:* indicate the attribute of the quality to which they belonged in the nominal pre-group matrix (S- security, E-effectiveness, ACP- user-centered care, Opportunity/access-OA, EC- efficiency, EQ- equity, R -Responsivity; Qualification of work processes - PT). **SDC performance rating according to the percentage of the maximum score achieved:** optimal (80 to 100%); Good (60 to 79%); Regular (36 to 59%); Insufficient (0 to 35%).

\*CD=dentistry/ ASB= Oral health assistant/ TSB= Oral health technician.

and thus to coordinate efforts with the PIAQ, through a self-assessment tool by relative indicators to enable comparisons.

The existence of the SIAQ-SDC (Self-assessment to improve access and quality of the Specialized Dental Center) does not imply discontinuing the search for self-rated SDC instruments. SIAQ-SDC is a non-mandatory self-assessment, based on satisfaction scale answered by professional staff and SDC manager on how much the service approaches the expected quality, being a non-comparative scale with absolute categories<sup>53</sup>. In addition, the matrix of indicators proposed here may assist the SIAQ process to verify whether the strategies built by the teams to achieve targets of fragile standards were effective.

It is essential to search evaluations methods that can achieve the health services demands and the matrix of indicators created in this study was build with this intention. For example, the lack of cordination between Specialized Dental Centers (SDC) and Primary Health Care was an important fator for the low performance of two SDC from regional clusters of Rio Grande do Norte state, analyzing the goals established for Ordinance GM No. 1.464/2011 through the Global Milestone Targets index (CGM)<sup>56,53</sup>. In this way, an evaluation method that analyses this criteria is essential because it reveals another services of the Health Care Network that must be evaluated.

## Conclusion

The final matrix of indicators is coherent to the discussions, where it was essential to propose indicators, focusing on the work processes developed and the PHC/SDC integration in favor of the healthcare network. Nevertheless, the matrix seeks to constitute a self-assessment tool that verifies how the work processes in the SDC align with the organizational values of the PHC. In addition, the indicators intend external validity, subsidizing evaluation, regardless of the SDC geographical location. A feasible motivation, since the matrix focuses on the work process of SDC, inferred and reproduced in any municipality of the country.

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