Abstract

Actions and initiatives for monitoring and evaluation accompany the development of health systems. Because of the complexity of management systems and services particular to Brazil, the need for a policy and system for monitoring and evaluation is clear given the scope and volume of services and procedures, as well as the characteristics of the legal provisions underlying such organizations. Thus, the Department of Monitoring and Evaluation of the SUS (Departamento de Monitoramento e Avaliação do SUS - DEMAS) for the Executive Secretary of the Ministry of Health (Secretaria Executiva do Ministério da Saúde) is currently constructing such a system and has proposed an “Evaluation System for Qualification of the SUS”. The SUS evaluation system comprises a set of evaluation programs that are relatively independent but related, concatenated and complementary. Combined, they are aimed at producing the necessary information and strategies to develop and qualify the SUS through evaluations for fulfilling its principles and guidelines. The analysis described herein comprises the following components: the Performance Index for the SUS (Índice de Desempenho do Sistema Único de Saúde – IDSUS), the National Program for Assessment of Health Services (Programa Nacional de Avaliação de Serviços de Saúde - PNASS), national studies evaluating use, access and satisfaction as well as a National Program for Improving Access and Quality of Primary Care (Programa Nacional de Melhoria do Acesso e da Qualidade da Atenção Básica - PMAQ).
initiatives described herein are intended to provide synergy between the components and improve the management capacity of the Unified Health System (SUS).

**Keywords:** monitoring and evaluation of health, management of the unified health system, management of health actions and services, brazilian ministry of health.

**Introduction**

Knowledge and actions in monitoring and evaluating have long been involved in the health field and history of the Brazilian health system. Different concepts are common and constant in analyses that aim to verify, measure and determine the value of something based on a parameter (e.g., legal precept, optimum, reference standard and objective). It may be stated that the basis of any evaluation consists of comparing a measurement to a defined parameter, which can be a measurement over time or a related value. For this comparison, measurements that are typically used are calculated for a determined point over a period of time and expressed as quantitative and/or qualitative indicators.

Monitoring consists of longitudinal analyses that seek to produce information on the course or development of something over time by monitoring the defined variable more frequently using observations, records, measurements and compilations.

One could argue that monitoring and evaluation are two sides of the same process. If monitoring accompanies the development of something, it is compared through its evolution. Therefore, monitoring is also an evaluation; one method of evaluating includes comparing the development of something over time. However, performing many successive evaluations may be considered as a form of monitoring.

While many initiatives and experiments are ongoing, systemic processes as well as periodic evaluation and monitoring of the Unified Health System (Sistema Único de Saúde – SUS) have not been developed.

It is common practice to use data and indicators as well as the analysis to disseminate information. However, the information generated is not useful in decision-making or qualifying the services and actions of the surveillance and health care. Furthermore, it is rare that such information becomes a source for new knowledge. Thus, there is a need in the SUS for generating strategic information for management, which should include periodic and continuous well-structured assessment results that are products of an evaluation system.

The Department for Monitoring and Evaluation of the SUS (Departamento de Monitoramento e Avaliação do SUS – DEMAS) for the Executive Secretary of the Ministry of Health has developed a system for evaluation that is considered to be essential for developing the Policy for Monitoring and Evaluation of the Unified Health System, and a proposal for an “Evaluation System for Qualification of the SUS” is presented herein. This strategy to aid in SUS management is based on the competency of the Department through Article 10 of Decree 7.530/11, which is as follows:
I - coordinate the formulation and execution of the Policy for Monitoring and Evaluation of the SUS;

II - coordinate the processes of elaboration, negotiation, deployment and implementation of standards, tools and methods needed to strengthen the monitoring and evaluation practices of the SUS;

III - articulate and integrate the actions of monitoring and evaluation performed by the agencies and units of the Ministry of Health;

IV - develop methodologies and supporting initiatives that qualify the process of monitoring and evaluating of the SUS;

V - facilitate and coordinate studies and research on the production of knowledge in the field of monitoring and evaluation of the SUS;

VI - develop actions with internal and external control agencies, with other agencies of the federal government and with organizations in the areas of information and evaluation to improve the quality of monitoring and evaluation of the SUS;

VII - participate in coordination of the collegiate process of monitoring, assessment and management of information of the SUS; and

VIII - systematize and disseminate information to support strategic decision-making by federal management of the SUS.

This proposal includes a description of the objectives, political configuration and major initiatives under development as well as an analysis of the primary effects expected from its effective implementation.

**Objectives of the SUS Qualitative Evaluation System**

- Evaluate the SUS for compliance with the following principles: universal access, comprehensive care, equality, equity and select guidelines, including regionalization, hierarchy, a single command by a sphere of management and tripartite responsibility.

- Contribute to qualifying the SUS, wherein qualification can be considered in the following two ways: determining the current quality and inducing improvements (i.e., to increase the level of quality) while evaluating and monitoring the problems and shortcomings encountered, which should be a priority to the managers for enhancing the SUS quality;

- Subsidize managers with information that aids in developing the policies, strategies and programs necessary to implement the principles and guidelines of the SUS;

- Aid managers in analyzing health status and planning health services and actions in accordance with the needs and rights of the citizens;

- Aid in searching for greater SUS efficiency and effectiveness to improve the health of the Brazilian population;

- Contribute through regulating, controlling, evaluating and acting on behalf of the SUS;

- Contribute through controlling agencies within and outside of the public administration;
• Aid in developing actions that facilitate participation and social control through strategic information.

Specific objectives

• Evaluate the performance of the SUS, which serves residents in the municipalities, health regions, states, Brazilian national regions and country;
• Evaluate access to and the effectiveness of care at different levels: basic, specialized hospitals, outpatient, urgencies and emergencies;
• Assess the health facilities at all levels of care for appropriate structures, processes and results;
• Evaluate the performance of health teams in health care production;
• Assess the difficulty in generating user access to and satisfaction of the quality of service and health services received at all levels of care;
• Promote improvements to the quality of management, financing and infrastructure data (facilities, networks and work force) of surveillance and health care through a systematic evaluation.

A Qualitative Evaluation System for the SUS

An evaluation system for the SUS can be understood as a set of evaluation programs that are relatively independent but related, concatenated and mutually complementary with the objective of forming a complex aimed at producing the necessary information and strategies for developing and qualifying the SUS for fulfilling its principle objectives and guidelines through evaluations.

The SUS qualitative evaluation system would include the following components:

• Performance Index of the SUS (Índice de Desempenho do Sistema Único de Saúde – IDSUS);
• National Program for the Assessment of Health Services (Programa Nacional de Avaliação de Serviços de Saúde - PNASS);
• National studies evaluating use, access and satisfaction;
• National Program for Improving the Access and Quality of Primary Care (Programa Nacional de Melhoria do Acesso e da Qualidade da Atenção Básica - PMAQ).

Performance Index of the SUS (Índice de Desempenho do Sistema Único de Saúde - IDSUS)

The IDSUS program evaluates the performance of the SUS in fulfilling its principles, including universal access, comprehensive care and equity. IDSUS also evaluates the SUS for the following policies: regionalization, hierarchy, single command by a sphere of management and tripartite responsibility. The assessment is based on indicators calculated using data from
This evaluation is used to measure the approximate distance between the SUS and a system that would meet the needs of all Brazilians in health actions and services.

The elementary core of the IDSUS evaluation is that the "SUS that attends the residents of each Brazilian municipality" because it considers primary care (performed in the municipality) and specialized outpatient and inpatient care in a the municipality in addition to other municipalities as well as at the regional, state and national centers.

Because the IDSUS has focused on evaluation, the IDSUS not only evaluates the public health system in isolated municipalities but also the entire integrated public network and hierarchy in accordance with the level of care; this network is organized into health regions. Therefore, this program evaluates the set of health actions and services at increasing levels of complexity to ensure that the health care provided is complete and in accordance with the Network of Health Care, as defined in Decree No. 7,508, June 28, 2011.

The IDSUS considers the smallest unit evaluated to be the "SUS that attends the residents of each Brazilian municipality" (including all regionalized care) and evaluates the performance of the SUS in the states, regions and country by evaluating the "SUS that attends the residents of each Brazilian municipality" and averaging the results, which are weighted using the respective populations.

In summary, the objectives of the IDSUS are the following: (i) evaluate the SUS performance in the municipalities, health regions, states, regions and country; (ii) evaluate access to and the effectiveness of different levels of care, including primary, specialized outpatient, inpatient, urgency and emergency care; (iii) express this evaluation through simple and compound indicators; (iv) detect and classify deficiencies for improvement; and (v) assess the SUS for its defined commitments because IDSUS indicators have defined goals in the Public Action Organizational Contract (Contrato Organizativo de Ação Pública – COAP) aimed at organizing specialized health actions and services in regionalized and hierarchical networks, in accordance with Decree No. 7,508.

The IDSUS performance evaluation was inspired by the Performance Evaluation of the Health System for the PRO-ADESS and is focused on evaluating health care using select indicators that measure the potential or access and effectiveness of health actions and services regionally and at the Health Care Network for residents in each Brazilian municipality.

Sources of the IDSUS indicator data include the following: National Registry of Health Establishments (Cadastro Nacional de Estabelecimentos de Saúde - CNES); Outpatient Information System (Sistema de Informação Ambulatorial - SIA); Information System for Notifiable Diseases (Sistema de Informação de Agravos de Notificação - SINAN); Information System of the National Immunization Program (Sistema de Informação do Programa Nacional de Imunização - SI-PNI); Hospital Information System (Sistema de Informação Hospitalar - SIH); Mortality Information System (Sistema de Informação sobre Mortalidade - SIM); Information System on Live Births (Sistema de Informação sobre Nascido Vivo - SINASC); Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística - IBGE); and Ministry of Social Development and Fight Against Hunger (Ministério do Desenvolvimento Social e Combate a Fome - MDS).

Project Development of a Methodology for the Performance Evaluation of the Brazilian Health System (Projeto Desenvolvimento de Metodologia de Avaliação do Desempenho do Sistema de Saúde Brasileiro - PRO-ADESS) of the Brazilian Associate of Graduate School in Public Health (Associação Brasileira de Pós Graduação em Saúde Coletiva - Abrasco) coordinated by the Institute of Communication and Scientific and Technological Information in Health (Instituto de Comunicação e Informação Científica e Tecnológica em Saúde - ICICT) of the Oswaldo Cruz Foundation (Fundação Oswaldo Cruz - Fiocruz).
The evaluation model for the IDSUS includes characterization in accordance with the Brazilian municipalities’ homogeneity that is grouped according to socioeconomic similarities, which are based on the infant mortality profile and structure of the municipality’s health system. Based on the other three PRO-ADESS dimensions, Determinants of Health, Population Health Conditions and Structure of the Health System, this module is used to briefly contextualize the performance of the "SUS that attends the residents of each Brazilian municipality"; however, it analyzes specific results and cannot be used to evaluate or rate the performance of the SUS.

To evaluate the performance of the SUS for health care, 24 indicators were selected (14 for potential or access to health care and 10 for effectiveness) distributed across primary care, urgencies and emergencies, as well as outpatient and inpatient care.

In addition to the 24 simple indicators, the IDSUS comprises seven composite indicators, which include the following:

- Index of potential or access to primary care;
- Index of access to outpatient or inpatient care of average complexity;
- Index of access to outpatient or inpatient care of high complexity, which is compared with a reference for medium and high complexity as well as urgent and emergency care;
- Index of primary care effectiveness;
- Index of medium- and high-complexity urgent and emergency care effectiveness.

These five indices facilitate calculation of the index for potential or access to the SUS, which is a general access assessment, and calculation of the SUS’s effectiveness index evaluates the care effectiveness and is a general average.

The first IDSUS results were published on March 1, 2012 and refer to data from 2007 to 2010, which indicates the status of the "SUS that attends the residents of each Brazilian municipality" through 2010. These results are an approximation for the entire history of the SUS and not just a single or the most recent SUS management evaluation at the municipal, state and federal levels. It should also be noted that the IDSUS did not address improvements in 2011 and 2012 (data for these years were not yet complete in early 2012).

The 24 indicators that compose the IDSUS were weighted using Principal Component Analysis, which is a relevant method that stresses the differences between the "SUS that attends the residents of each Brazilian municipality" in both access to and effectiveness of the levels of care in different regions. The IDSUS composite indicators from application of this method, construction of IDSUS maps and analysis of the results by municipality clusters facilitate greater equity of the SUS.

Overall, the initial results from the IDSUS showed that the biggest problem with the SUS is access, and in most municipalities, primary care is better than specialized care. Thus, the IDSUS showed that improvements are needed in regionalization (i.e., access should be improved for residents in cities without specialized care to neighboring towns with more infrastructure for medium and high complexity inpatient and outpatient care) and improve resident access to reference center municipalities.
The IDSUS indicated that, in addition to specialized care, municipalities have more difficulty with primary care. The IDSUS also indicated that specialized care is more deficient in the Northern, Northeast and Midwest regions than in the Southeast and Southern regions of Brazil.

The Ministry of Health may decide to present performance awards based on the IDSUS results; however, they should be distributed for achieving certain goals, and such goals may include changes in evaluation results through 2010 (or later) to improve quality. Therefore, there is no penalty for a lower IDSUS result; however, managers receive incentives based on advancing certain goals. It is important to note that there are no uniform national goals, and regional goals are based on the Regional Collegiate through the COAP, which considers the difficulties and peculiarities of the SUS in municipalities and health regions. These goals should be perceived as steps toward achieving certain objectives expressed in national parameters.

While composite indicators rank using a scale from 0 to 10, the IDSUS facilitates understanding of the level of care provided by the SUS permits for all in his or her municipality, regardless of education level. This includes when he/she requires attention in another municipality. This rapid information provided by the "SUS that attends the residents of each Brazilian municipality" ranking is a powerful tool for improvements demanded either by the citizens or Boards of Health. Therefore, the IDSUS ranking, which is not unique but includes several rankings for access and effectiveness of primary and specialized care, is a strong catalyst for mobilizing and defending SUS improvements to health care.

The synthesis, perception and mobilization are inherent in the SUS politics through the executives, legislators and managers. Since its creation, the SUS has rarely been a subject of concern for mayors, deputies, governors or the federal government. However, with the upcoming 2012 municipal elections, the IDSUS evaluations that indicate certain difficulties support the need for a solution.

The objective of the IDSUS is to formulate a set of questions on the realities of the "SUS that attends the residents of each Brazilian municipality" more than generate a ranking or a set of data, indicators or photographs while being less than a comprehensive explanation. Providing an approximation of the SUS, the IDSUS is expected to consolidate evaluation and monitoring practices and identify the primary problems with the SUS, as well as re-establishing necessary agreements among managers with goals and commitments for ongoing construction in the SUS to better respond to the citizens’ rights and health of the Brazilian people.

**National Program for Evaluation of Health Services (Programa Nacional de Avaliação de Serviços de Saúde – PNASS)**

Since 2004, the Department of Health Care in the Ministry of Health based on the Department of Regulation, Evaluation and Control Systems (Departamento de Regulação, Avaliação e Controle de Sistemas, DRACS) has reshaped the National Program for the Evaluation of Hospital Services (PNASS), which began in 1998 and was known as the National Program for the Evaluation of Health Services (PNASS).

The objectives of the PNASS were to evaluate SUS services and understand them comprehensively as well as to evaluate the structures, processes and results related to risk, access and satisfaction of citizens based on health services and facilities. Four dimensions were evaluated, including the following:
- Compliance standards;
- Production indicators;
- Study of the satisfaction of users;
- Study of the conditions and working relationships.

The NPEHS was established through ordinance No. 382/6M of 10/03/05 and was predicted to evaluate 9,747 health services. Through June 2006, 6,191 evaluations of compliance standards were completed by municipal/state management.

Table 1 shows the percentage of responses by assessment type.

Table 1 - Percentage of PNASS responses according to assessment type in Brazil, 2006.

<table>
<thead>
<tr>
<th>Status</th>
<th>Auto-avaliação %</th>
<th>Avaliação dos Gestores %</th>
<th>Satisfação dos usuários %</th>
<th>Relações de Trabalho %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Não iniciada</td>
<td>75,34</td>
<td>32,16</td>
<td>35,60</td>
<td>35,16</td>
</tr>
<tr>
<td>Em andamento</td>
<td>1,5</td>
<td>4,3</td>
<td>6,3</td>
<td>6,3</td>
</tr>
<tr>
<td>Finalizada</td>
<td>23,19</td>
<td>53,51</td>
<td>58,19</td>
<td>58,9</td>
</tr>
<tr>
<td>Total</td>
<td>100,0</td>
<td>100,0</td>
<td>100,0</td>
<td>100,0</td>
</tr>
</tbody>
</table>

Source: MS/SAS/DRAC/CGRASIPNASS - http://pnass.datasus.gov.br

Although it has not been performed continuously, the PNASS is an important initiative of the Ministry of Health for the evaluation of health services, and its renewal is fundamentally important because it may potentially provide a rich database. This database facilitates the generation of indicators for evaluating health facilities and user satisfaction of these services, which significantly contributes to a more complete evaluation of the performance of the health systems. Rationales for PNASS failures may include the following:

1. All collection and entry of PNASS data in specific online software was the responsibility of municipal and/or state managers, which was elaborated by the Ministry of Health. They did not have an adequate number of workers to perform such a task;

2. Little integration of the PNASS in the municipal and state Sanitary Surveillance agencies’ routines, especially for verification of the component ‘compliance standards of the establishments’;

3. Little development of the component ‘production indicators’ with few indicator tests based on SIA and SIH;

4. No prioritization and/or discontinuity by the Ministry of Health for the program’s development or planning. This includes disconnection from any of the care policies developed.

Since 2010, through Fiocruz, the Ministry of Health hired the Brazilian Consortium of Accreditation (Consórcio Brasileiro de Acreditação - CBA) to prepare a proposal for restructuring the PNASS. This proposal was recently completed after testing the methodology in a number of hospitals distributed in Brazilian regions. Although it may be difficult to fully complete because of specific training requirements, this proposal, which is based on the
methodology for hospital accreditation, may significantly contribute to reformulating the PNASS. This possibility is especially likely considering the important and pertinent aspects of health service quality evaluations based on the “International Fundamentals of Quality and Safety in Patient Care”.

Based on the above considerations, the following is proposed for restructuring the PNASS:

1. Selection and testing of a set of indicators based on the SIA, SIH and SCNES. Testing the feasibility of calculating these indicators in the Hospital Admission Communication database of the SCIH;

2. Restructuring the PNASS using the ANS proposal for evaluating the quality of services provided;

3. Use the experience and statistical methodologies of the IDSUS, including the development of composite indicators and scores from comparison with the parameters;

4. In conjunction with the Sanitary Surveillance, reformulate the component ‘compliance standards of establishments’. Link these standards to verification of inspection activities and establishment licensing;

5. Incorporate the items proposed for qualifying the CBA by the Sanitary Surveillance agency into verification;

6. Develop modules to verify the compliance standards necessary for the qualification and accreditation processes of institutions to perform actions and specialized services in conjunction with specialized care and regulation, control and evaluation;

7. Renew the methodology for collection and entry of PNASS data using handheld computers in an online network, which was performed by the IBGE in the 2010 census;

8. Develop a module for a user satisfaction survey on services from the experiences of the SUS Charter and satisfaction surveys from pregnant women generated by the SUS Ombudsman.

*Evaluation of user access to services and satisfaction*

Assessment of access to and satisfaction with health services, as well as SUS action, through direct interviews with Brazilian citizens relies on periodic data (every five years) from a National Household Sample Survey Health Supplement (Pesquisa Nacional por Amostra de Domicílio – Suplemento Saúde - PNAD Saúde) of the IBGE. This survey organization is under reconstruction to produce the National Health Survey (Pesquisa Nacional de Saúde – PNS); this process is also aided by occasional sample surveys generated by the IPEA in November 2010.

Despite the importance and significance of these studies, they lack a sample survey that assesses access to services and beneficiary satisfaction, which would be assessed periodically as well as in short time intervals and represents the "SUS that attends the residents of each Brazilian municipality". The PNAD Saúde generates results for large regions, federal units, selected metropolitan areas and the Federal District.

To perform sample surveys that evaluate user access to as well as use and satisfaction of the SUS, the following is proposed:
• Conduct a periodic (every three years) population survey with a brief questionnaire to assess key aspects of user access to and satisfaction with the "SUS that attends the residents of each Brazilian municipality";

• To generate a confidence interval of 95% and a sampling error of 5%, 384 respondents attended by SUS per Brazilian municipality are necessary. This would total 2,136,960 interviewees for all of the Brazilian municipalities. Considering replacement of approximately 50% (research experience with user access to and satisfaction of the SUS conducted by the Ministry of Health Ombudsman) for questionnaire non-respondents or users not served by the SUS, this number would increase to approximately 3.2 million respondents;

• This sample size will generate statistically significant results on the care provided by the SUS to all of the respondents in a municipality regardless of the level of care. For larger territories (health regions, states, regions and country), by summing the responses from the interviewees in each municipality, statistically significant results would be generated for each level of care (primary, urgent and emergency care as well as specialized outpatient and inpatient care)

• The questionnaire template was from the sample survey on user access to and satisfaction with the SUS conducted by the Ministry of Health Ombudsman in the second half of 2011. The SUS Charter model would be unique and discriminate based on the type of health facility sought by the user in the last 12 months. If the user sought more than one, the user would be invited to complete a questionnaire for each type of establishment (Appendix I, below);

• Data collection was performed four ways, which are mutually exclusive for the same respondent, and the summations from the following methods compose the sample size: SMS (cellular), the Brazilian health hotline 136, phone interviews and personal interviews in locations with low telephone coverage;

• This inquiry does not eliminate the SUS Charter or the study on pregnant women by the SUS, which serves as a channel of direct communication between the user and the Ministry of Health. The inquiry would also collect data related to treatment by category, which would set the basis for assessing user satisfaction with the PNASS and facilitate specific evaluations.

National Program for Improving Access and Quality of Primary Care (Programa Nacional de Melhoria do Acesso e da Qualidade da Atenção Básica - PMAQ)

The National Program for Improving Access and Quality of Primary Care is a program that seeks to induce the creation of processes that increase the abilities of federal, state and municipal management as well as Primary Care Teams to provide services that ensures greater access and quality in accordance with the specific needs of the population.

The program seeks to increase access to and the quality of primary care as well as guarantee a quality standard comparable to the national, regional and local levels to facilitate greater transparency and government effectiveness in primary health care throughout Brazil.
The PMAQ is organized into four complementary phases that form a continuous cycle to improve access and quality of the primary care AB (Compliance and Contractualization; Development, External Evaluation and Recontractualization).

The first phase of the PMAQ consists of a formal step in joining the program through contractual commitments and indicators signed by the Primary Care Teams, city managers and Ministry of Health personnel involved in processes with local, regional and state agreements, as well as social control.

The second stage consists of developing a set of actions employed by the Primary Care Teams, state and municipal administrations as well as Ministry of Health to promote changes in management, care and care management for improved access to and quality of primary care. This phase is organized into four dimensions (self-evaluation, monitoring, continuing education and institutional support).

The third stage is the external evaluation phase, which is the phase where a set of actions is performed to evaluate the conditions of access and quality for all of the participating municipalities and Primary Care Teams.

Finally, the fourth phase consists of a process for defining a single agreement between the teams and municipalities to develop new standards and indicators of quality, which will stimulate institutionalization of a systematic and cyclical process using the results the PMAQ participants.

**Final Considerations**

Evaluating the SUS and its complexity requires considerations at several different scales (local, regional, state and national) and implies that at least three distinct dimensions should be evaluated: user and worker satisfaction, health services from structured secondary data and national SUS databanks.

The strategies herein (IDSUS, PNASS, PMAQ and user satisfaction surveys under way in the Ministry of Health) were presented to provide synergy to a complex rating system in an attempt to encompass the major SUS indices.

However, there is a consensus among many experts that an evaluation process for the Brazilian SUS has been under construction for decades. In addition, many experts state that information and surveillance in the health fields are key for qualifying health care. Considering an evaluation system is only relevant if this process is linked to improving the management capacity of the various components in Brazil’s SUS, it is expected that this policy represents the best step forward; however, the goal is to stimulate even greater advances in this direction.