

Evaluation of the Family Health Strategy implementation in Santa Catarina in 2004 and 2008

Avaliação da implantação da Estratégia Saúde da Família em Santa Catarina em 2004 e 2008

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ABSTRACT: This study aimed to evaluate the implementation of the Family Health Program in municipalities of the State of Santa Catarina, Brazil at two different periods (2004 and 2008). Two hundred forty-four (83%) municipalities with complete health information data comprised the sample. Indicators of coverage, evidence of change in the healthcare model, and impact were calculated based on health system database. Official documents and observed distribution of measures at the country level were used in order to classify municipalities within each indicator. A high coverage level increased from 73 to 83% of the cities between 2004 and 2008. Most of them showed poor evidence of change in the healthcare model at both time points. Increased proportion of cities showed low levels of morbidity by diseases sensible to the primary health care from 2004 to 2008. Despite the fact that was improvement in coverage and impact indicators over four years, most of the cities studied showed poor evidence of change in the healthcare model, warning to the review of the health care practices and organization by health professionals and managers.

Keywords: Family Health Program. Health evaluation. Health services coverage. Primary health care. Evaluation. Health services.

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RESUMO: O presente estudo trata de uma avaliação da Estratégia de Saúde da Família no Estado de Santa Catarina em dois períodos distintos: 2004 e 2008. Ao todo, 244 (83%) municípios apresentaram informações completas e foram incluídos nas análises. Foram calculados indicadores de cobertura potencial, índice de mudança no modelo assistencial e de impacto sobre internações, com informações obtidas nos sistemas de informação em saúde. Os parâmetros de classificação dos indicadores foram definidos por meio de documentos oficiais ou calculados a partir da distribuição observada no Brasil. A alta cobertura potencial aumentou de 73 para 83% dos municípios entre os anos de 2004 e 2008. A maioria dos municípios foi classificada na categoria de “fraco” índice de mudança de modelo assistencial, não havendo mudanças importantes neste indicador entre os dois períodos analisados, mas houve aumento de municípios com taxas reduzidas de internação por doenças sensíveis à atenção básica. Os resultados indicaram ampliação da rede assistencial na atenção básica no estado de Santa Catarina, mas sem indícios de efetiva mudança do modelo assistencial, o que estabelece a necessidade de aperfeiçoamentos no trabalho das equipes.

Palavras-chave: Programa Saúde da Família. Avaliação em saúde. Cobertura de serviços de saúde. Atenção básica. Avaliação. Serviços de saúde.

INTRODUCTION

The Family Health Program (FHP)¹ was set into motion in 1994 with the purpose of reorganizing the healthcare model in Brazil and gradually became part of the network of health services offered in the majority of Brazilian cities. Currently known as FHS (Family Health Strategy), it has a fundamental role in the Brazilian healthcare system, administered by the Ministry of Health as the gateway to the Unified Health System (UHS)². The main characteristics of the FHS are teamwork and ascribed distribution of patients, with a forecasted number of families/individuals under its responsibility. The FHS differs from traditional basic care by its proactive approach to the health of the community ascribed which relies on territorialization, family registers, diagnoses of health situation, and health initiatives developed in partnership with the community.

More recent investigations have sought to evaluate the FHS as a model of primary health care within the Brazilian healthcare system, especially the Ministry of Health's commission of Base Line Studies in the sphere of the Program of Expansion and Consolidation of the Family Health Strategy. The evaluation methods used in the studies are diverse, including collection of information from health unit professionals and users, and measurements of markers of access, bond, services, programmatic actions, professional satisfaction, work processes, family focus, and community orientation, among others³⁻⁶.

The FHS was initiated in 1994 in Santa Catarina, still called a Program then, and has evolved with gradual adhesion from its municipalities. In 2005, there were 1,053 acting

teams that covered 59% of the State's population. In a study conducted at that time⁷, the authors analyzed the implantation of the program considering the period from 2001 to 2004. They identified a significant coverage expansion, but found no changes in the care model and no evidence of impact on the hospitalization of individuals with illnesses that did not require more than outpatient attention. In 2009, there were 1,353 acting teams, denoting an increase of almost 30% since 2005 that was higher than the growth observed in Brazil (approximately 23%).

The continuous expansion of the FHS must be followed by the reorientations expected by this proposal, including the desired impact on avoidable hospitalizations. Thus, in the present study we aimed at reevaluating the implementation of the Family Health Strategy in the State of Santa Catarina between 2004 and 2008 by considering indicators of potential coverage, evidence of change in the care model, and impact on hospitalizations.

METHODOLOGY

This is an evaluative study carried out with secondary data obtained from the Basic Care Information System (BCIS), the UHS's Hospital Information System (HIS), and from the Public Health Budget Information System (PHBIS) of the municipalities that provided data to be included in the systems of the State of Santa Catarina in 2004 and 2008⁸⁻¹⁰. The methods adopted in the present study are described in detail in Henrique and Calvo's study⁷, and were chosen for being practical and easy to apply, with a reduced number of indicators whose measurements can be calculated based on the data available on the BCIS and on the HIS. The triad structure-process-results devised by Donabedian¹¹ was simplified for the indicators that represented potential coverage, evidence of change in the care model, and impact on hospitalizations, respectively.

In order to analyze coverage, we calculated the percentage of potential population coverage. This option is justified by the fact that the FHS currently represents the model of primary care indicated for the population of the whole country. This indicator pertains to the resources available to assist its target population, and not the population that effectively utilizes the FHS. To calculate the potential population coverage, we used the equation proposed by the Ministry of Health¹², in which the number of residents of a given municipality abides by the estimates of the Brazilian Institute of Geography and Statistics, as follows:

$$\text{Population coverage} = \frac{\text{n}^\circ \text{ of teams} \times 3.450}{\text{Resident population of municipality}} \times 100$$

The potential coverage was identified in both moments encompassed in this study and categorized as high (above 70%), moderate (between 50 and 70%) and low (below 50%). To verify the evolution of this indicator, we used the categories "increase", "no alteration", or "decrease", according to the changes that occurred between 2004 and 2008.

The indicator “evidence of change in the care model” was composed based on information about home visits made by doctors, requested exams of clinical pathology, referrals to specialists, and individual care provided by nurses.

According to Henrique and Calvo⁷, the analysis of home visits paid by doctors aims at comprehending how much the municipality values this work instrument in the area of family health as an element that facilitates the bond between medical professionals and the community. Exams of clinical pathology and referrals to specialists were included so that we could analyze the insertion of the FHS in the healthcare system. These procedures are herein understood as indicators of the role of the FHS as a gateway to the health system, as well as of access to other levels of health care (medium and high complexity). Finally, individual care provided by nurses was utilized as an indicator that the care offered by other members of the team is valued, thus surpassing the model centered on the strict assistance of doctors.

To calculate the measurements of the indicator “evidence of changes in the care model”, we used ratios in which the numerator was the number of individual medical consultations conducted by a team, and the denominator was the number found for each of the variables described above, in the same location and time period. According to the original proposal, this calculation enables the verification of the balance between the care provided by a doctor (consultations) and other activities carried out by the team. A change in the model corresponds to a relative balance between the other activities and the number of medical consultations, which was usually considered the main action in the traditional model of care. The parameters for this indicator were established as explained below.

Regarding the number of medical consultations ideally expected, we considered that the 40 weekly hours would be divided in 16 hours allotted to groups, visits and meetings, and 24 hours to individual appointments at a health unit, with an average of 20 minutes per patient, on average. This calculation results in 72 individual medical appointments per week. For home visits paid by a doctor, we considered a time frame of 40 to 80 minutes per visit, 4 hours per week, which is conducive to 3 to 6 home visits per week. Based on these first calculations, the ideal proportion foreseen would be one home visit for 12 ($72/6$) to 24 ($72/3$) medical appointments.

Concerning the exams of clinical pathology, we took into consideration Ordinance number 1101/GM of 2002, which establishes the parameters of the UHS’s care coverage¹³. According to this document, the proportion of foreseen requests for exams should vary between 30 to 50% of the total of medical consultations. This proportion indicates that one exam is expected for each 2 (50%) to 3.3 (30%) medical consultations.

In regards to individual appointments with a nursing professional, we considered an ideal number of consultations that took into consideration the time spent to plan and manage a health unit (12 hours), time for group activities and team capacitation (8 hours), and time for home visits (8 hours), with 12 hours left for individual consultations — divided among pediatric care, prenatal care and clinical care — for a total of 24 consultations possible. As the number of weekly medical consultations expected was 72, the expected ratio was one consultation with a nurse for three medical consultations. We defined 20% above or

below this number as a satisfactory interval, which resulted in one nursing consultation for each 2.4 to 3.6 medical consultations.

The Ministry of Health¹² recommends 85% of case resolution for patients assisted at the primary care level, which results in 15% of expected referrals. Upon broadening this interval to 10 to 20% of referrals, the expected number of referrals to a specialist is one referral to each 5 to 10 consultations⁷.

The calculation of the indicator “evidence of change” was based on the number of measurements observed within the respective ideal interval, with possible values from 0 (no measures with an ideal value observed) to 4 (all four measures with values within the ideal range). Next, the municipalities were classified, based on the years of 2004 and 2008, according to the number of measurements that were complied with, as follows: 0 to 1 (weak evidence of change); 2 to 3 (moderate evidence of change); and 4 (strong evidence of change)⁷.

The measurement of the indicator of impact was conducted based on an analysis of the number of hospitalizations due to conditions that would respond to outpatient care, namely asthma, cardiac insufficiency, pneumonia, diarrhea, and presumably infectious gastroenteritis⁷, within a set of one thousand inhabitants in a one-year period. We used a distribution, in quartiles, of the hospitalization rates observed in Brazil in 2004, as follows: below the 1st quartile (small number of hospitalizations); between the 2nd and 3rd quartiles (moderate number of hospitalizations); and above the 3rd quartile (large number of hospitalizations).

In order to compose the general classification of the municipalities in relation to the level of implementation of the FHS, scores were attributed according to the results of the measurements used for each indicator. Thus, 0 (zero) was attributed to indicators with poor scores, 3 (three) was attributed to indicators with moderate scores, and 5 (five) to indicators with good scores. Next, the scores of the three indicators were added up and the implementation of the FHS was categorized as satisfactory (municipalities with total scores above 10), intermediate (municipalities with total scores between 7 and 10), and unsatisfactory (municipalities with total scores below 7).

To investigate the factors associated with the positive evolution of the FHS, we considered the variables “municipality size” (up to 10,000 inhabitants; between 10 and 20,000; between 20 and 50,000, between 50 and 100,000; and over 100,000 inhabitants), “percentage of self-funded investment in health” according to information from the PHBIS (less than 15%, from 15 to 19.9%, and equal to or above 20%), and “period of implementation of the FHS in the municipality” (1998 to 1999, 2000 to 2001, and 2002 to 2004). The date of implementation of the FHS was considered based on information pertaining to the registering of families, prenatal procedures, and pediatric care found on the BCIS.

For the statistical analysis, we used McNemar-Bowker’s test to assess whether changes that occurred in the indicators of potential coverage, evidence of change in the care model, and impact were statistically significant. Next, we applied logistic regression to assess which variables were associated with positive changes in the level of implementation of the FHS. The analyses were conducted in the software Stata, version 9 (description) and the level of significance established was 5%.

RESULTS

Out of a total of 293 municipalities in Santa Catarina, 244 (83%) had complete information pertaining to the years 2004 and 2008 that allowed us to measure the indicators selected. The main reasons for exclusion of municipalities was lack of information regarding the number of FHS teams and FHS procedures that were used to measure the indicator “evidence of change in the model”. The information concerning the indicator of impact were the most thorough.

In regards to changes in coverage levels within the period analyzed, the majority of municipalities (82%) maintained the coverage level verified in 2004. The changes in coverage levels which occurred between 2004 and 2008 were almost always related to expansion, with 11 municipalities increasing their potential coverage from low to moderate, nine municipalities from low to high, and 18 municipalities going from moderate to high potential coverage. Only four municipalities decreased their coverage, two due to a reduction in the number of teams, and two because the number of inhabitants increased but the number of teams remained the same. We verified improvements pertaining to the indicator of

Table 1. Percentage distribution (confidence interval of 95%) of the municipalities of Santa Catarina according to potential coverage, evidence of change in the care model, and impact on hospitalizations.

Indicator	2004	2008	p-value*
	% (95%CI)	% (95%CI)	
Coverage			< 0.001
Low	14.3 (10.2 – 19.4)	7.4 (4.4 – 11.4)	
Moderate	12.3 (8.4 – 17.1)	9.4 (6.1 – 13.8)	
High	73.4 (67.3 – 78.8)	83.2 (77.9 – 87.7)	
Evidence of change			< 0.001
Poor	88.9 (84.3 – 92.6)	65.2 (58.8 – 71.1)	
Moderate	11.1 (7.0 – 15.7)	34.8 (28.9 – 41.2)	
Strong	–	–	
Impact			< 0.001
Low	20.5 (15.6 – 26.1)	15.6 (11.3 – 20.7)	
Moderate	64.8 (58.4 – 70.7)	54.5 (48.0 – 60.1)	
High	14.8 (10.1 – 19.8)	29.9 (24.2 – 36.1)	

*McNemar–Bowker’s Test.

evidence of change in the care model, as 34.8% of the municipalities presented moderate signs of change in 2008, in comparison to 11% in 2004. However, only one municipality presented strong indications of change in 2008 and was re-classified as moderate so as to allow the conduction of the statistical test. Significant improvements were also observed for the indicator of impact, with an increase of 50% in the proportion of municipalities classified as high impact (Table 1).

Table 2 displays the contribution of each of the four measurements used to compose the indicator of changes in the care model. Overall, we verified that a small proportion of the municipalities presented measurements within the parameters expected. For instance, the ratio of the number of medical home visits per medical consultation was very low, as 68% of the municipalities in 2004 and 78% in 2008 had less home visits than expected. The ratio between the number of clinical pathology exams and medical consultations increased from one period

Table 2. Distribution of the municipalities according to evidence of change in the health care model.

Measurements and parameters	2004	2008	p-value
	% (95%CI)	% (95%CI)	
MC/HV			0.007
< 12 (more HV than expected)	9.8 (6.4 – 14.3)	3.7 (1.7 – 6.9)	
12 to 24 (expected)	22.5 (17.4 – 28.3)	18.0 (13.4 – 23.4)	
> 24 (less HV than expected)	68 (61.3 – 73.4)	78.3 (72.6 – 83.3)	
MC/PE			0.005
< 2 (more PE than expected)	18.9 (14.1 – 24.3)	26.6 (21.2 – 32.7)	
2 to 3.3 (expected)	15.2 (28.1 – 40.3)	18.4 (13.8 – 23.9)	
> 3.3 (less PE than expected)	66.0 (59.7 – 71.9)	54.9(41.4 – 61.3)	
MC/RS			0.007
< 5 (more RS than expected)	3.3 (1.4 – 6.4)	6.2 (3.4 – 9.9)	
5 to 10 (expected)	8.2 (5.1 – 12.4)	14.8 (10.1 – 19.8)	
> 10 (less RS than expected)	88.5 (83.8 – 92.2)	79.1 (73.5 – 84)	
MC/NC			0.659
< 2.4 (more NC than expected)	34.8 (28.9 – 41.2)	33.2 (27.3 – 39.5)	
2.4 to 3.6 (expected)	16.0 (11.6 – 21.2)	19.3 (14.5 – 24.8)	
> 3.6 (less NC than expected)	49.2 (42.7 – 55.6)	47.5 (41.1 – 54.0)	

MC: medical consultations; HV: home visits; PE: clinical pathology exams; RS: referrals to a specialist; NC: nursing care.

to the other, but it was mostly due to excessive requests for exams per consultation. Although a slight improvement occurred, the ratio was also low between the number of referrals to a specialist and medical consultations, as approximately 89% (in 2004) and 79% (in 2008) of the municipalities presented less referrals than expected. There were no significant changes ($p > 0.05$) between the periods analyzed concerning the ratio between the number of appointments with a nurse and medical consultations, as only 16% (in 2004) and 19% (in 2008) of the municipalities presented measurements within the prescribed parameters.

The changes in the classification of the municipalities according to the degree of implementation of the FHS are displayed on Table 3. Within the period analyzed, there was a reduction of 46% in the amount of municipalities classified as unsatisfactory, in opposition to a number four times larger of municipalities classified as satisfactory. A small portion of municipalities either maintained an unsatisfactory status of implementation (15.6%) or deteriorated in the period investigated (5.3%). In the subsequent analyses, the municipalities were grouped in those that improved or maintained a satisfactory level of FHS implementation (39.8%) and those that deteriorated or maintained an unsatisfactory or intermediate status (60.2%).

Upon analyzing the factors associated with a positive evolution of the implementation of the FHS, we verified that the municipalities with more than 100,000 inhabitants, which invested in the area of health with a percentage equal to or higher than 20% and where the FHS had been implanted longer evolved the most. These associations were not confirmed statistically due to the relatively large confidence interval of the odds ratios, both in the gross analysis and in the analysis adjusted by all variables (Table 4).

DISCUSSION

Evaluations of health services in Brazil have gained visibility over this past decade, and researchers as well as administrators have demonstrated growing efforts in search of evaluation methods, instruments, and approaches that contribute to the

Table 3. Distribution of the municipalities of Santa Catarina according to the level of implementation of the Family Health Strategy (2004 and 2008).

2008	2004			Total
	Unsatisfactory	Intermediate	Satisfactory	
Unsatisfactory	38 (15.6)	5 (2.0)	0 (0.0)	43 (17.6)
Intermediate	38 (15.6)	96 (39.3)	8 (3.3)	142 (58.2)
Satisfactory	17 (7.0)	36 (14.8)	6 (2.5)	59 (24.2)
Total	93 (38.1)	137 (56.1)	14 (5.7)	244 (100.0)

institutionalization of this practice in health services. In the present study, we evaluated the degree of implementation of the Family Health Strategy in the State of Santa Catarina in two periods according to indicators of coverage, evidence of changes in the care model, and impact — obtained from secondary databases available in health information systems. Although the period of evaluation (2004 to 2008) was relatively short, some improvements notably occurred in potential coverage and in the rate of hospitalizations due to illnesses that could be treated in basic care. On the other hand, we observed weak evidence of change in the model of care, which indicates that the organization of health services does not seem to be in accordance with the precepts of the FHS.

Table 4. Factors associated with the positive evolution of the Family Health Strategy implementation in municipalities of Santa Catarina between 2004 and 2008.

Variables	%	Crude OR (95%CI)	p-value	Adjusted OR (95%CI)	p-value
Size (per 1,000 inhabitants)			0.627		0.771
Up to 10	39.9	1		1	
From 10 to 20	39.6	0.99 (0.52 – 1.88)		0.85 (0.43 – 1.69)	
From 20 to 50	28.6	0.60 (0.22 – 1.64)		0.54 (0.19 – 1.49)	
From 50 to 100	41.7	1.08 (0.33 – 3.55)		1.12 (0.33 – 3.81)	
Over 100	60.0	2.26 (0.61 – 8.36)		1.89 (0.47 – 7.57)	
Investment (% CA-29)			0.364		0.402
Less than 15%	34.4	1		1	
Between 15 and 19,9%	39.8	1.26 (0.57 – 2.77)		1.31 (0.58 – 2.98)	
More than or equal to 20%	46.2	1.64 (0.57 – 4.73)		1.90 (0.61 – 5.95)	
Period of implementation			0.348		0.417
More recent	37.2	1		1	
Intermediate	38.5	1.06 (0.53 – 2.11)		1.05 (0.52 – 2.13)	
Earlier	47.5	1.53 (0.64 – 3.67)		1.41 (0.56 – 3.55)	

OR: Odds Ratio; 95%CI: confidence interval of 95%; p: tendency value; CA-29: Constitutional Amendment number 29.

Among other aspects, the FHS is characterized by patient attribution, that is, by the registering of an expected number of people in a certain area that is the potential target of the actions of a health care team. The indicator of potential coverage used in this investigation had the purpose of establishing the extent to which the population of a municipality is theoretically covered by basic care according to the ratio between the number of family health teams and the total population residing in it. Ideally, the amount of FHS teams would be enough to cover 100% of the population of a municipality, which would therefore ensure universal access to health services, one of the precepts stated by the UHS. However, the social and sanitary reality differs among the different regions and municipalities of Brazil, and this goal is not plausible and/or necessary for part of the municipalities. Therefore, we adopted zones of potential coverage as a parameter for evaluation, according to the reality found in the entire country in 2004, and also retained comparability with the results found by Henrique and Calvo⁷, who previously used the same indicators and measurements to evaluate the implantation of the FHS in Santa Catarina.

From 2004 to 2008, the proportion of municipalities with a potential coverage that surpassed 70% increased, and only 17% of the municipalities presented coverage that was inferior to this percentage in 2008, as opposed to 27% in 2004. In 2001, only half of the municipalities evaluated achieved this level of coverage in the State of Santa Catarina⁷. The growing process of municipalization of health services promoted by the Ministry of Health enabled about 15% of the municipalities to reach higher levels of coverage. Although this factor was not investigated in this study, subsequent evaluations should consider the number of teams per health care unit. Based on characteristics of urban occupation in the cities of Santa Catarina, a larger number of health units by geographical region is preferable to a larger number of teams in the same unit that assists a sizeable region. Organizing the system with more units would enable a closer contact among health care teams and the population ascribed to their territory.

For the indicator of evidence of change in the care model, we took into consideration the balance between the work performed by medical doctors and the other activities carried out by a Family Health Team. We assumed that medical consultations have a fundamental role in the care provided to users of the health care system, but, on the other hand, they should occur in a balanced manner along with home visits, referrals to specialists, nursing care, and requests for complementary exams. Concerning this indicator, the great majority of municipalities did not present results within the expected parameters, corroborating the findings of a previous evaluation conducted between 2001 and 2004⁷. The tendency to cut down the number of medical home visits in relation to the number of individual medical consultations verified between the periods might indicate that the act of tending to spontaneous demands in the health units is limiting the conduction of programmed activities, such as home visits, or that creating a register file for these activities has not been a priority in health

services. A more pessimistic hypothesis is that the traditional medical practice still prevails by resisting to a new model of care in which the relationship between the medical doctor and the patient is more horizontal.

In regards to requests for exams made per medical consultation, the proportion of municipalities with the expected number of requests remained small (15 and 18%, in 2004 and 2008, respectively) over time, and are even comparable to 2001 (17.6%)⁷. This measurement is an important indicator of care model organization, as both the excess and the lack of requests for exams might indicate faults in health assistance guidelines. The first can incur higher financial costs to the health system, patient anxiety, excessive demand in the laboratories, and delayed diagnoses that could be clinical, among other negative aspects¹⁴. On the other hand, the lack of requests can hinder diagnostic investigations, as well as point out inefficiencies in the system pertaining to its integrality and resolvability.

Concerning resolvability, in this study we considered the number of consultations in relation to referrals to a specialist as an approximate measurement of this indicator. We observed an improvement between the periods analyzed, as the proportion of municipalities that presented measurements within the expected parameters almost doubled in 2008. However, the majority of municipalities presented a weak relation between referrals and consultations. This result must be analyzed with caution, as we cannot infer how negative it is, in fact, our finding of a small quantity of referrals of users to other health professionals. Upon considering that one of the guidelines of basic care is resolvability, which seeks to remedy the health problems of the users within a specific health unit, we could conclude that the FHS is fulfilling its purpose in Santa Catarina. However, if this finding is the result of shortcomings in the structure and organization of referral and counter-referral systems, which involves access to other health care levels, this situation can indicate that the health system has not complied with the UHS' guidelines for integrality.

Evaluating the impact of the FHS on the indicators of health of a population is a challenging task, as the factors that determine health go beyond the effectiveness of basic care and include, for instance, the population's living conditions (schooling, employment rates, and basic sanitation, among others). To illustrate this point, Monteiro et al.¹⁵ reported a reduction of 50% in the prevalence of malnutrition in Brazil from 1996 to 2007, explained, in order of importance, by the mothers' higher schooling, better purchasing power of the poorer people, access to health care assistance, and better sanitation conditions. In a study carried out in four cities in the northeastern part of Brazil, the authors verified that socioeconomic conditions, at the familial and health level, nullified possible differences in indicators of children's health in different profiles of care coverage (no coverage, Community Health Agents Program, Family Health Program, and FHP/CHAP)⁶. The authors concluded that the existence of the FHS *per se* did not ensure better indicators, and that evaluating the extent of its implementation in each reality was a necessary strategy to determine its effectiveness.

Despite this limitation, the results of the present study revealed that the municipalities of Santa Catarina presented significant improvements regarding the indicator of impact in the period analyzed. Our presupposition was that a municipality that counted on resolute and encompassing basic care in its territory would present lower rates of hospitalization for illnesses such as asthma, cardiac insufficiency, pneumonia, and intestinal infections than those where basic care was inefficient and incipient. The choice for these infirmities was due to their relation to basic care¹⁶ and the simplicity of assessing them, although there are more encompassing proposals in the literature that include a longer list of illnesses and health conditions that are treatable at the basic care level¹⁷.

Finally, we analyzed possible variables associated with a good evolution of implantation of the FHS. Although not statistically significant, larger municipalities that invested in health and where the system had been established for longer periods of time presented better evolution of its implementation over the course of five years. Oppositely, it was observed in 2001 that smaller municipalities had better indicators of implementation¹⁸. On one hand, these results might reflect a tardy basic care structuration in large municipalities, a result of the fact that the initial efforts made by the federal government were primarily directed toward small municipalities, which achieve high coverage rates with a small number of teams. The introduction of the Project for Expansion and Consolidation of the Family Health Strategy in 2003 — which strongly stimulated the development of the FHS in municipalities with more than 100,000 inhabitants in Brazil — can be one of the factors associated with the changes observed in this study. The tendency to achieve better implantation among municipalities with more financial participation reinforces the necessity of investing in the area of health as a way to consolidate and improve the quality of basic care. Lastly, the extent of FHS implantation in the municipalities seems to be a result of its consolidation over time.

Nowadays, we witness a profusion of instruments, reports and information that are not followed by changes and decision-making in the context of managing and organizing the health system¹⁹. Using collected information as an instrument for evaluation can contribute to the rationalization of health services and their consequent improvement. In this study, differently from recent investigations in which primary information was used for evaluation³⁻⁶, we utilized information available in health information systems. This approach has limitations in regards to the evaluation of some basic care indicators, but values the systematization of data collection and information filing and contributes toward making them more reliable. We verified evidence of improvements in the registers upon comparing the number of municipalities evaluated in the study by Henrique and Calvo⁷ (n = 125) to the 244 analyzed here, both using criteria of information completeness in order to include the municipalities in the analyses.

We can conclude that, in general, the municipalities of Santa Catarina improved in relation to all indicators used to evaluate the Family Health Strategy in the periods

of 2004 and 2008. As it occurred in a previous evaluation⁷, the most important improvements were related to coverage and impact, with only slight improvements in the indicator of evidence of change in the model of care. This result draws attention to the necessity of revising work processes in FHS units, and prompts a more in-depth investigation about the factors that determine the small number of medical home visits, referrals to a specialist, requests for clinical pathology exams, and limited nursing care in relation to the number of medical consultations. Despite our findings, caution is necessary when interpreting them, as using potential coverage as a proxy for structure and the rate of hospitalizations due to causes treatable in basic care as an indicator of result might not sensitively discriminate the quality of basic care in the municipalities in question.

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