

FAMILY HEALTH STRATEGY COVERAGE AND HOSPITALIZATION RATE FOR PRIMARY CARE SENSITIVE CONDITIONS IN A MUNICIPALITY IN THE SOUTHERNMOST STATE OF BRAZIL, 2014-2018

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ABSTRACT

Introduction: Primary Care Sensitive Conditions (PCSC) are health problems that serve as an instrument for assessing and monitoring the effectiveness of the primary care level of the health system. **Objective:** This study aim to contextualize the relationship between the coverage of the Family Health Strategy and the rate of hospitalizations for PCSC in the municipality of Santana do Livramento (Brazil), from 2014 to 2018. **Methods:** This is a quantitative study based on data from the Hospital Information System of the Brazilian public health system, as well as from the primary health care information system of Santana do Livramento Municipality, a city in the southernmost state of Brazil. **Results:** hospitalizations PCSC accounted for 24% of total hospitalizations, with a 12% reduction from 2014 to 2018. In the same period population coverage by family health teams increased from 29% to 46%. The main causes of hospitalizations were diseases of the respiratory system (47% of admissions), followed by digestive tract diseases (20%) and circulatory system diseases (9%). **Conclusion:** It was not possible to observe a relationship between the coverage rate by family health teams and a reduction in hospitalizations due to conditions sensitive to primary care.

KEYWORDS: Health Management. Primary Health Care. Primary Care Sensitive Conditions. Public Administration.

INTRODUCTION

The implementation of the Family Health Program is considered a milestone in the incorporation of the primary care strategy in the Brazilian health policy. Since 1999, it has been considered as a structuring strategy of municipal health systems by the Ministry of Health, with the aim of reorienting the healthcare model and creating a new dynamic in the organization of health services and actions.^[1]

Primary health care has been presented as a health care organization strategy aimed at responding in a regionalized, continuous and systematized way to most of the health needs of a population, integrating preventive and curative actions.^[1] This represents the gateway to the Brazilian public health system (Unified Health System – SUS, in Portuguese) and articulates

clinical actions for prevention, cure and rehabilitation, based on the principles of universality, comprehensiveness and equity.^[2]

Since the creation of the Family Health Strategy, Brazil has shown considerable expansion of primary care services, with a population coverage of 75% by primary health care units, 64% considering only family health teams, in 2017. In Rio Grande do Sul (RS), the southernmost state of the country, population coverage was 75.2% and 58.8%, respectively.

With the expansion of primary care throughout the national territory, there was also an increase in the resolution charge of these services. Thus, research based on hospitalizations for Primary Care Sensitive Conditions (PCSC) emerged as a valuable instrument to

monitor access and quality of services provided in primary care. The premise is that high hospitalization rates for conditions sensitive to a population's primary care may indicate problems related to access to or performance of the health service, becoming a warning sign to trigger analysis mechanisms and search for explanations for the event. Thus, it is a valuable indicator for monitoring and evaluation of health systems,^[3] especially the effectiveness of the primary care level of the health system.^[4]

In Brazil, studies on PCSC have shown a downward trend and may be related to better health system organization and an increasingly structured and strengthened primary care network.^[5,6,7] The quality of the healthcare offered in primary care, using data on potentially avoidable admissions with the primary health care services; demonstrate that the best coverage at this level of care is associated with the reduction of PCSC.^[8]

Several studies have associated a higher risk of hospitalization for PCSC with the occurrence of: previous hospitalization, regular visits to health facilities, health care not performed or hospitalization requested by doctors who do not work in the family health team, availability of hospital beds, access and quality of primary care, living in areas covered by the family health program and health unit operating time.^[9,10,11,12]

In this scenario, this study aims to contextualize the relationship between coverage by family health teams and the rate of hospitalizations for conditions sensitive to primary care in the municipality of Santana do Livramento (RS, Brazil), from 2014 to 2018.

MATERIALS AND METHODS

This is a quantitative study based on data from the Hospital Information System of the Brazilian public health system, as well as from the primary health care information system of Santana do Livramento Municipality, a city in the southernmost state of Brazil. The main variables were the coverage of primary care offered through the Family Health and Basic Health Units teams and hospitalizations for conditions classified as sensitive to primary care in the period from 2014 to 2018.

Santana do Livramento is a municipality in the state of Rio Grande do Sul, located on the border with Uruguay and distant 498 km from the capital, Porto Alegre. It has an estimated population of 77,027 inhabitants for 2019 and an area of 6,950.37 km², being the second largest municipality in Rio Grande do Sul. It is part of the Rio Grande do Sul Campaign Region, standing out in livestock (cattle and sheep) and rice and soy production. More recently, winemaking has been gaining prominence. According to the last demographic census, conducted in 2010, the municipality population has a Human Development Index of 0.803, a life expectancy at

birth of 72.17 years, a population rate of over 65 years of 11.3% and a Gini index of 0.54.

A spreadsheet was structured containing the profile of hospitalizations for conditions sensitive to primary care, with the following variables: general hospitalizations by year of occurrence, PCSC by year of occurrence, diagnostic groups by PCSC, PCSC diagnosis groups according to age and to gender. The codification was based on the Brazilian List of Hospitalization due to PCSC published by the Ministry of Health,^[13] consisting of 19 groups of causes and 74 diagnoses, according to the ICD-10.

Hospitalizations for childbirth were excluded, assuming they are not diseases. Data management included the use of descriptive statistics (frequency and mean). By employing secondary data from public access, there was no need for referral to the Ethics Committee.

RESULTS AND DISCUSSION

Table 1 shows the frequency of hospital admissions, total and due to Primary Care Sensitive Conditions (PCSC), and population coverage rate by family health teams in the municipality of Santana do Livramento, from 2014 to 2018. Of the total hospitalizations registered in the period, 24% are due to conditions sensitive to primary care, with a particularly significant reduction in 2018. National studies found hospitalization percentages ranging from 15.9% to 24.8%.^[14,15,16] A study analyzing 39 million hospitalizations in Argentina, Colombia, Costa Rica, Ecuador, Mexico and Paraguay resulted in 14.3% of PCSC, with rates ranging from 10.8% (Costa Rica) to 21.6% (Colombia).^[17]

The implementation of family health teams in Santana do Livramento began in 2014, increasing the following year, at which point the coverage rate remained constant. It was not possible to observe a relationship between the coverage rate by family health teams and a reduction in hospitalizations due to conditions sensitive to primary care. There is divergence among national studies on this association, with some authors finding a direct relationship between the coverage rate and the reduction of hospitalizations, no influence or its inverse.^[9,17] In this sense, some variables, such as patient characteristics, the variability of the criteria adopted to indicate hospitalization and the admission policies of tertiary care centers may contribute to the increase or decrease of the PCSC indicator.^[18]

Table 1: Frequency of hospital admissions, total and due to Primary Care Sensitive Conditions (PCSC), and population coverage rate by family health teams in the municipality of Santana do Livramento, from 2014 to 2018.

Hospital admissions / year	2014	2015	2016	2017	2018	Total
Total admissions	5 364	5 032	5 563	4 577	4 294	24 830
Total PCSC diagnosis	1 536	1 316	1 497	1 090	625	6 064
% PCSC diagnosis	29,0%	26,0%	27,0%	24,0%	15,0%	24,0%
% Population coverage by Family Health Teams	28,8%	41,4%	45,7%	45,9%	46,1%	-

Source: Hospital Information System of the Brazilian public health system (SIS/SUS)

Of the 6,064 PCSC admissions, 3,072 (50.7%) were in male patients and 2,992 (49.3%) in females, with a similar distribution between the diagnostic groups by gender. Data similar to those found by other studies,^[20] although they found higher prevalence in females.^[14,16]

The main causes of hospitalizations for PCSC-related diagnoses are in table 2. The most frequent were respiratory diseases (47% of the total), digestive diseases (20%), circulatory diseases (9%), endocrine, nutritional and metabolic diseases (9%), and skin and subcutaneous tissue (5%).

The most common diagnoses were pneumonia; other digestive tract diseases; bronchitis, emphysema and other chronic obstructive pulmonary diseases; and heart failure, accounting for 4,332 hospital admissions, or 71.4 % of the total. The prevalence of respiratory diseases, unlike other national studies, is the most frequent cause of hospitalization for PCSC,^[2,20,21] may be related to weather conditions in the state of Rio Grande do Sul, which is semi-tropical, which differs from other states in the country.

Table 2: Frequency of hospital admissions for diseases sensitive to primary care by ICD-10 cause groups (and, in these, more frequent diagnoses), in Santana do Livramento, 2014-2018.

Group - Primary Care Sensitive Conditions	2014	2015	2016	2017	2018	Total
01 Some infectious and parasitic diseases	10	6	42	24	26	108
Diarrhea and presumed infectious gastroenteritis	-	-	10	17	15	42
03 Blood and hematopoietic organ disorders and some immune disorders	1	1	4	2	0	8
Iron deficiency anemia	1	1	4	2	-	8
04 Endocrine, nutritional and metabolic diseases	124	115	112	86	114	552
Diabetes mellitus	97	93	84	61	77	412
Malnutrition	27	22	28	25	37	139
06 Nervous system disorders	57	76	73	63	34	303
Epilepsy	57	76	73	63	34	303
08 Ear and mastoid apophysis diseases	5	2	6	5	4	22
Otitis media and other disorders of the middle ear and mastoid apophysis	5	2	6	5	4	22
09 Circulatory System Diseases	126	123	132	103	74	558
Essential Hypertension (Primary)	1	-	15	5	5	26
Cardiac insufficiency	125	123	117	98	69	532
10 Respiratory Tract Diseases	809	591	730	565	183	2 877
Pneumonia	563	411	504	406	119	2 003
Bronchitis, emphysema and other chronic obstructive pulmonary diseases	185	127	137	87	24	560
Asthma	45	42	62	25	17	191
11 Digestive Diseases	329	357	316	132	115	1.249
Other digestive tract diseases	325	357	314	127	114	1.237
12 Skin and subcutaneous tissue disorders	67	38	69	89	61	324
Skin and subcutaneous tissue infections	40	21	27	25	26	139
Other disorders of skin and subcutaneous tissue	27	17	42	64	35	185
16 Diseases of the genitourinary tract	8	7	13	21	14	63
Other inflammatory diseases of female pelvic organs	5	7	9	15	11	47
Total	1 536	1 316	1 497	1 090	625	6 064

Source: Hospital Information System of the Brazilian public health system (SIH/SUS)

The frequency of hospital admissions for diseases sensitive to primary care by ICD-10 cause groups (and, in these, more frequent diagnoses) and age range are shown in table 3. There is a predominance of hospitalizations in children under 5 years old (27.2% of the total) and individuals over 60 years old (37.4%), similar to that found in other Brazilian studies.^[16,21,22] The age group between 15 and 19 years old had the lowest number of hospitalizations due to PCSC (2.4%).

Among children under 5 years of age, the main cause of hospitalizations for PCSC was the respiratory system diseases group (1,103 cases, 66.8% of the total), highlighting the diagnosis of pneumonia, with 842 cases (76.3 % of hospitalizations in the age group, 42% of the diagnose case). Data similar to those present in other Brazilian studies.^[14,21] In a study^[23] performed in the United States, the main preventable causes of hospitalization in children were pneumonia, skin infections, gastroenteritis and asthma.

At the opposite extreme, among individuals aged 60 years and over, there were 2,267 hospitalizations for PCSC, 1,028 (45.3%) of which for respiratory system diseases, with pneumonia and bronchitis accounting for almost all diagnoses. After pneumonia (28.8%), heart failure (19%) and other digestive tract diseases (17.4%) were the most frequent diagnoses in this age group. Contrary to another study^[14], the diagnosis of hypertension was inexpressive, with only 26 records.

Table 3: Frequency of hospital admissions for diseases sensitive to primary care by ICD-10 cause groups (and, in these, more frequent diagnoses) and age range, in Santana do Livramento, 2014-2018.

Group - Primary Care Sensitive Conditions	Less 1 year	1 - 4 years	5 - 9 years	10 - 14 years	15 - 19 years	20 - 29 years	30 - 39 year	40 - 49 year	50 - 59 year	60 - 69 years	70 - 79 years	80 + years	Total
01 Some infectious and parasitic diseases	26	22	9	3	5	7	12	2	6	12	4	0	108
Diarrhea and presumed infectious gastroenteritis	10	19	6	2	-	-	1	-	1	-	3	-	42
03 Blood and hematopoietic organ disorders and some immune disorders	0	0	0	0	0	0	0	3	0	3	2	0	8
Iron deficiency anemia	-	-	-	-	-	-	-	3	-	3	2	-	8
04 Endocrine, nutritional and metabolic diseases	15	4	3	8	8	27	28	52	116	102	118	71	552
Diabetes mellitus	-	3	3	6	8	23	20	44	108	83	80	34	412
Malnutrition	15	1	-	2	-	4	8	8	8	18	38	37	139
06 Nervous system disorders	32	122	32	21	18	13	15	6	24	6	9	5	303
Epilepsy	32	122	32	21	18	13	15	6	24	6	9	5	303
08 Ear and mastoid apophysis diseases	2	4	4	3	1	2	1	2	3	0	0	0	22
Otitis media and other disorders of the middle ear and mastoid apophysis	2	4	4	3	1	2	1	2	3	-	-	-	22
09 Circulatory System Diseases	0	1	0	2	1	6	7	23	75	152	165	126	558
Essential Hypertension (Primary)	-	-	-	2	1	3	1	4	4	6	3	2	26
Cardiac insufficiency	-	1	-	-	-	3	6	19	71	146	162	124	532
10 Respiratory Tract Diseases	572	531	186	65	38	61	72	97	227	323	388	317	2877
Pneumonia	443	399	127	45	28	44	59	70	134	182	216	256	2.003
Bronchitis, emphysema and other chronic obstructive pulmonary diseases	51	31	3	3	-	2	5	19	88	131	167	60	560
Asthma	23	70	51	12	3	7	4	5	4	7	4	1	191
11 Digestive Diseases	85	188	122	98	39	69	60	100	92	129	145	122	1249
Other digestive tract diseases	85	188	122	98	39	68	58	96	92	128	142	121	1.237
12 Skin and subcutaneous tissue disorders	13	33	11	10	25	54	25	36	51	34	18	14	324
Skin and subcutaneous tissue infections	1	13	2	8	13	29	16	16	16	16	5	4	139
Other disorders of skin and subcutaneous tissue	12	20	9	2	12	25	9	20	35	18	13	10	185
16 Diseases of the genitourinary tract	0	1	1	3	12	20	17	5	2	1	0	1	63
Other inflammatory diseases of female pelvic organs	-	-	-	2	11	14	13	5	1	1	-	-	47
TOTAL	745	906	368	210	147	259	237	326	596	762	849	656	6.064

Source: Hospital Information System of the Brazilian public health system (SIH/SUS)

CONCLUSION

The methodology employed allowed the identification of the PCSC, step for the formation of policies and strategies aimed at the qualification of management, with consequent reduction of hospitalizations that could be solved in primary care, thus increasing their resolution and coverage.

This study identified a higher frequency of hospitalizations among individuals aged 60 years and over and under five years of age. The main cause of hospitalization in both groups was respiratory system diseases, especially pneumonia.

It was not possible to observe a relationship between the coverage rate by family health teams and a reduction in hospitalizations due to conditions sensitive to primary care. It is suggested to carry out studies with a larger population quantity, in order to test the existence of association between these two variables.

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