

## Home Care in Brazil: an exploratory study on the construction process and service use in the Brazilian Health System

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**Abstract** *Changes in demographic and epidemiological profiles, in Brazil and in the world, have brought the need to adapt the health care model. In this context, Home Care (HC) emerges as an alternative strategy of health care driven by several concerns: dehospitalization, rationalization of the hospital bed use, costs reduction, and the organization of patient-centered care. This study aims to analyze HC in the Brazilian Unified Health System, identifying the modalities of care and inequalities in service use. Thereby a documentary analysis of the legislation and secondary data available on the home care volume of services and procedures explorations were realized. In total, 94,754 home-based hospitalizations occurred in the 2008-2016 period, and 4,008,692 home-based outpatient procedures were carried out in the 2012-2016 period. Outpatient HC was more widespread, while home-based hospitalizations were concentrated in some geographical areas. The regional discrepancy is striking, revealing inequalities in supply, access, and use. Despite the legal framework, the establishment of a specific program, and volume of production, HC does not seem to be yet effectively incorporated as one of the apexes of the Health Care Network.*

**Key words** *Home Care. Information Systems. Geographic Locations. Equal Access to Health Care Services*

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## Introduction

Changes in the demographic and epidemiological profile in Brazil and the world raise the need to adapt the health care model, leading several countries to think of Home Care (HC) as a strategic point of care for health care. HC increase in several countries follows, in parallel, the interest of health systems in the process of dehospitalization, rationalization of the use of hospital beds, cost reduction, and organization of patient-centered care. Home care demand is yet another challenge for health systems, contributing to a change in the focus of care and the environment in which care is provided<sup>1</sup>.

The population aging process is a factor that drives health systems' concern about new care models<sup>1,2</sup>. However, it is not the only one, as the demand for continued home care is accompanied by other equally relevant and eligible health needs, such as the care provided to premature infants, children with sequelae and chronic diseases, adults with multiple, chronic, degenerative diseases, and individuals requiring palliative care, life support, and rehabilitation. Thus, the relevance of the improvement the home care implementation is highlighted in the current and future health agenda of all health systems<sup>3</sup>, aiming to contribute to the configuration of substitute health care networks and the transformation of health practices<sup>2</sup>.

Approaching HC as a care model, some authors have already questioned the real need for inpatients due specific health problems, considering some reasons for hospitalizations as expandable or unnecessarily prolonged, which can be replaced or complemented by an HC service<sup>1,4,5</sup>. As a result, besides reducing expenses, on the world context, HC has represented the connotation of providing quality care, well-being, and comfort by allowing patients to remain in their home environment, integrated with their life context<sup>5</sup>.

Home-based health work is not just about delegating to the family the role of care provided to their family member. Kerber et al.<sup>4</sup> argues that, when recognizing the home environment as proper to care, a space for action, and the implementation of health work, the health sector disseminates the presence of the State and collaborates with the expansion of its services, through a greater outreach of its actions. However, this brings about particularities because home care presupposes the interaction of three actors: the patient (user), the caregiver, and the health pro-

fessional. The integration between the health system and the user in the implementation of health care at home is configured by the health service, a service performed by a multidisciplinary team, which provides the necessary care to the user with the accompaniment of a caregiver, in turn, represented by a relative, friend or neighbor<sup>6</sup>. Caregivers traverse the role of both caregivers and users since they simultaneously perform care practices and require technical, emotional, and social support from health professionals. One issue to be taken into account concerns the elected family caregiver, in most cases, represented by women, a typical role for a wife or daughter. From this perspective, the task of caring associated with the female figure has historical, cultural, social, and affective roots. That is, women are traditionally responsible for home chores, children, older adults, or the sick, and are seen as natural caregivers<sup>7,8</sup>.

Furthermore, in home care, the professional will need to be incorporated into the cultural and family context of the patient, and for this reason, will need sensitivity to understand broadly how care will be performed and the obstacles ahead. In this sense, health work is not restricted only to biological care but encompasses the dimension of interactions between human life and the environment<sup>4</sup>. Kerber et al.<sup>4</sup> believes that HC can be considered a potential instrument for the promotion of care shaped by the worker-user relationship and linkage, the reception, and developing shared responsibilities. There is also a need for the integration of health technologies, with relevant light technologies, considering that the professional-patient-family relationship occurs in the patient's home, unlike a hospital stay, in which family and patients must adapt, adjust to the environment, the institution, the established work practice, in the face of specific rules and norms<sup>2</sup>. Thus, when the health care practice shifts to the home environment, the effort to adjust to a given cultural and family reality must be performed by health professionals, so that the relational aspect becomes relevant to the success of care, where patients and caregivers, in their homes, play a much more active role and assume many responsibilities that are, in other environments, of limited responsibility to health professionals<sup>9-11</sup>.

Conceptually, HC is classified into four types of care, which differ per the specificity of their purposes and actions, which are: home care, home-based outpatient care, home visit and home-based hospitalization<sup>12</sup> (Box 1). The con-

ceptualization and consensual boundaries (Box 1) vary. From this perspective, Lacerda et al.<sup>12</sup> highlighted that the concepts and modalities of care inherent to home care vary between authors. To a certain extent, they portray conceptual distinctions, but also from a practical viewpoint concerning the organization of this type of care, with complementarity and interdependence between the four conceptualized modalities. In general terms, the home care nomenclature designates a broader concept, a general term that designates the organization of the health system and practices, which covers primary care, treatment, visits, and home-based hospitalization. Homebased outpatient care is also considered as home assistance or home care in international literature: home care. The home visit is, in turn, the most widespread concept in the Brazilian health system and the community's health practices. Home-based hospitalization, a modality of home care, uses hard health technologies and is related to the provision of medium and high complexity services.

HC is already present in the international scenario and is emerging as an imminent demand also for the national health system. Thus, aiming to elucidate how this model of care fits into the national context, this study aimed to analyze HC within the Unified Health System (SUS) to identify the legislation, the construction process, the care modalities, the available resources, as well as characterize their use and measure inequalities in the use of services in the national context.

## Methods

### Study design

An exploratory, qualitative, and quantitative study supported by scientific literature, official documents, and secondary data for the description of HC in the national territory, understanding of its role, and the construction process in the SUS.

### Source of information

A bibliographic review was carried out to retrieve experiences, initiatives, and evaluations on the subject, for which the following descriptors were employed: home care, home assistance, home-based hospitalization, home treatment, home-based outpatient care, and domiciliary care. We searched for scientific papers in Portu-

guese, English, and Spanish, published from 1995 to 2018, in the bibliographic databases BVS, Scielo, and PubMed. A search was also conducted from the bibliographic citations of each paper, theses, dissertations, and research reports.

Documentary research, including policies, laws, resolutions, regulations, rules, and manuals were also included in this review. The first step was reading the first regulations found in the bibliographic references, which led to the knowledge of the others. A search was conducted on the Ministry of Health's platform, Saúde Legis, based on household nomenclature and allowed to identify a plot of subsequent regulations and rules. Instructional manuals and other official documents were used to learn about the organization of HC in the SUS in the studied period.

Initially, we searched the National List of SUS Health Actions and Services (RENASES) and the Table of SUS Procedures, Orthoses, Prostheses, and Medicines Management System (SIGTAP/SUS) to identify the services provided and health procedures produced by the SUS within HC. The search in RENASES identified five types of actions and services within HC: Home Care; Family Care; Home or Institutional Visit; Multiprofessional Therapeutic Home Care in HIV/AIDS – ADTM; and Specialized Home Care by Multiprofessional Teams. Search in the SIGTAP/SUS identified 17 procedures performed at home by the SUS, namely, 01.01.03.001-0, 01.01.03.002-9, 03.01.01.013-7, 03.01.01.016-1, 03.01.05.001-5, 03.01.05.002-3, 03.01.05.003-1, 03.01.05.004-0, 03.01.05.006-8, 03.01.05.006-6, 03.01.05.007-4, 03.01.05.010-4, 03.01.05.014-7, 03.01.08.024-0, 03.05.01.016-6, 07.02.10.004-8, 07.02.10.005-6, its implementation forms, levels of complexity, types of financing and availability in the SUS Health Information Systems (SIS-SUS). Both guided the search in the information systems to build the database used.

Secondary data were obtained from information systems for public and unrestricted use, anonymous, and accessed through the platform of the SUS Informatics Department (DATASUS). At first, preliminary information was sought through online tabulation (Tabnet), using data from the Primary Care Health Information System (SISAB) to verify the existence of records regarding home care. At this stage, the possibility of using SISAB was excluded, since such an information system did not, at that time, allow public access to microdata.

Based on the search guided by the RENASES and SIGTAP portals, the following SIS-SUS was

**Box 1.** Concept on health care provided in the home environment.

<b>Concepts</b>	
<b>Home Care</b>	
Brasil (2006) <sup>22</sup>	A generic term that involves health promotion, prevention, treatment of diseases and rehabilitation actions carried out at home.
Lacerda (2006) <sup>12</sup>	Home care involves the practice of economic, social, and health policies to reduce the risk of individuals becoming ill; enforcement and planning of health programs; and the implementation of care, preventive, and educational activities. Thus, it ranges from promotion to the recovery of individuals affected by a health problem based on their respective homes.
World Health Organization (USA, 1999) <sup>23</sup>	For the American system, home care can be understood as “home healthcare”, with appropriate and quality health care provided to people in their own homes, with cost-benefit compatible with the lives of individuals, who must maintain their autonomy, independence and better quality of life.
<b>Home-based outpatient care</b>	
Brazil (2016) <sup>24</sup>	Home assistance (or home treatment) is a set of scheduled and continued outpatient activities developed at home.
Wealth Canada (1997) <sup>25</sup>	Provision of a provision of health and social services designed to support patients in their own homes.
Ryu et al. (Korea, 2004) <sup>26</sup>	“Home care” based on a perspective of the public health sector, through health actions carried out at home, with the family and the community, aimed at patients with chronic diseases and in need of long periods of treatment, avoiding hospitalization.
Thomé et al. (Sweden, 2003) <sup>27</sup>	Care provided by health professionals to the patient in their own home, with the ultimate goal of well-being, contributing to the quality of life and the improvement of health condition, in order to replace hospital care.
<b>Home Visit</b>	
Ribeiro (2004) <sup>28</sup>	The home visit is characterized by the timely contact of health professionals with the populations at risk, the sick, and their families to collect information or provide guidance.
Mazza (2004) <sup>29</sup>	In the home visit, actions of guidance, education, collection of possible health solutions, provision of educational subsidies are developed, so that the individuals can become independent.
Freitas (2000) <sup>30</sup>	The home visit must comprise systematic actions, which start before the visit and continue after it.
Murashima (Japan, 2002) <sup>31</sup>	Home visit activities carried out by nurses, who, after the first contact with the family, define the care approaches, as well as the guidelines to be passed on to the patient and the family for carrying out activities of daily living. It allows the provision of individualized care to the patients, which can be older adults, patients who need special care and advanced technology, terminal patients, or patients with mental illness.
<b>Home-based hospitalization</b>	
Ribeiro (2004) <sup>28</sup>	Home-based hospitalization is a continuous activity, providing technology and human resources, equipment, materials, and medicines for patients in more complex states requiring care similar to hospital care.
Lacerda (2000) <sup>32</sup>	Home-based hospitalization is the continuous provision of systematic and comprehensive care at home, with supervision and action by a specific, tailored health team, centered on the client’s reality and involving the family, which may or may not use equipment and materials.
Nogueira (France, 2000) <sup>33</sup>	Home-based hospitalization is a health care alternative in the health sector that consists of an organized model capable of providing care and assistance by doctors and nurses, both in quality and in quantity, to patients at home, who do not require hospital infrastructure, but active surveillance and complete care.

used as a data source: SUS Hospital Information System (SIH-SUS) and SUS Outpatient Information System (SIA-SUS). All records of the “re-

duced type files” were extracted from SIH-SUS, whose variable “realized procedure” corresponded to the code of home-based hospitalization:

03.01.05.007-4. These records formed the database on home-based hospitalizations performed nationwide during the study period, and this database was extracted with all variables available for each hospitalization. From the SIA-SUS, data on home-based outpatient care production were extracted, whose procedure variable corresponded to the 17 home-based outpatient care codes. The files of each Federative Unit were imported in both information systems, filtered and later tabulated using the DATASUS tabulation and data treatment program, namely, TabWin. The national databases were then built separately in TabWin after importing from DATASUS.

### Study universe

The study universe included home-based hospitalizations and home-based outpatient procedures, respectively extracted from the SIH-SUS and SIA-SUS information systems. We sought to explore the time available in SIS-SUS, which was from 2008 on SIH-SUS, and from November 2012 on SIA-SUS. It is worth noting that the temporal coverage of each system is related to the HC construction process, as per the decision of the ordinances corresponding to the production records in the respective databases.

The time frame considered the available period of each SIS-SUS, using data processed until 2016, due to the start point of this study, a routine of review and correction of the information made available for 2017. Thus, the following information was analyzed: SIH-SUS (January 2008 to December 2016) and SIA-SUS (November 2012 to December 2016). Thereby, the time bracket was not the same for both databases, since the research aimed to explore the information available in the SUS databases, with no intention of comparing variables between the databases.

At the end of the data extraction process, the study universe accounted for 94,754 home-based hospitalizations in the 2008-2016 period, as well as a total of 4,008,692 home-based outpatient procedures in the November 2012-2016 period.

### Data analysis

Due to the exploratory nature of the study, data analysis was limited to the descriptive stage. The following programs were used in the construction of databases, data processing, preparation of tables, graphs and maps: TabWin (DATASUS), SPSS 17.0 (SPSS Inc., Chicago, USA) and Microsoft Excel 2010.

The variables analyzed were available in the SIS-SUS, namely: the treatment/hospitalization year, gender, age, skin color/ethnicity, diagnosis, place of treatment/hospitalization (geographic location of residence), the origin of the patient (primary care, emergency, hospitalization), destination or reason for leaving treatment/hospitalization (discharge, continuing care, readmission, or death), days of stay under treatment/home-based hospitalization, and organization's ownership type (public, private profit and private nonprofit). Such variables were initially explored in Excel and, subsequently, a descriptive analysis was performed in SPSS.

Finally, there was an opportunity to relate the quantitative data with milestones identified in the documentary analysis and, with that, understand the current setting of HC in the SUS.

### Ethical considerations

Besides the scientific literature, documents, and secondary databases in public and unrestricted domain were used as an information source, and were, thus, exempt from opinion, as per resolutions of the National Research Ethics Commission (CONEP).

### Results and discussion

#### Legislation and the construction process of HC

The process of construction of HC in the SUS is anchored in several norms of this modality over the last 30 years. In total, 19 ordinances address the organization and implementation of HC-related services: the first one was enacted in 1998, and the most recent one, in 2016<sup>13</sup>. Parallel to the ordinances that formed the HC framework in the SUS, another 70 ordinances that specifically addressed enabling and disabling Home Care Services (SAD) in several municipalities were enacted. Four instructional manuals were also organized throughout the creation of the ordinances mentioned above, which, more practically, made explicit the current organization of the work process of HC in the SUS<sup>6,14-16</sup>.

As the first legislation to the organization of home health services, the Ordinance No. 2,416 was enacted in 1998 and established requirements for the hospitals certification and criteria for providing home care in the SUS. From then on, the configuration of HC in the SUS gradually occurred through the formulation of subse-

quent and complementary ordinances. In 2001, Ordinance No. 1,531 was established to provide patients with progressive muscular dystrophy the use of non-invasive mechanical ventilation (NIV) at home under the care of a multidisciplinary team financed by the SUS. It is worth noting that, in 2008, Ordinance No. 370 expanded the scope of this program's operation, including new pathologies eligible for HC. In 2002, Ordinance No. 249 established home care as a modality to be developed by the Reference Center for Elderly Health Care. The Resolution of the Collegiate Directorate of the National Health Surveillance Agency (RDC-ANVISA) No. 11 was enacted in 2006 and provided for the technical regulation of the operation of home care services<sup>13</sup>. The structuring of the so-called SAD is now based on the orientation of this resolution.

In 2006, the Ministry of Health (MS) enacted Ordinance No. 2,529, which established HC within the scope of the SUS and defined it as a set of activities provided to clinically stable people at their domicile, whose health condition required intensity of care superior to outpatient modalities, but that could be maintained at home through the presence of a team of professionals exclusively for this purpose. Five years later, in August 2011, this ordinance was revoked and new Ordinance No. 2,029, perhaps the most important, represented a legislative landmark in the structuring process of HC, as it addresses it as a modality of care within the SUS, in order to remove the focus of home-based hospitalization as a single home care delivery model, mentioning HC as technological incorporation that replaces or complements hospital intervention.

The federal government launched the *Melhor em Casa* (Best at Home) Program on November 8, 2011, which incorporated HC to the SUS as one of the components of the Urgent and Emergency Care Networks (RUE) and, from this perspective, as proposed by Ordinance No. 1,600 (July 2011), should be incorporated into the Health Care Networks (RAS). Thus, per the Program's guidelines, HC is a surrogate or supplementary health care modality in the SUS, characterized by a set of health promotion, prevention, disease treatment, and rehabilitation actions, provided at home, seeking expanded and continued care, integrated with the RAS.

Regarding accountability for the implementation of the SUS, in 2011, Ordinance No. 2,527 reestablished rules for the registration of the SAD and its respective teams, namely, the Multidisciplinary Home Care Teams (EMAD) and the

Multidisciplinary Support Teams (EMAP). It also established qualification criteria for health facilities, such as a SAD, to which EMAD and EMAP would be linked. Then, in 2013, Ordinance No. 963 again redefined HC within the SUS, gaining a new version in 2016, through Ordinance No. 825, which redefined HC within the SUS and boosted the qualification of SAD.

As of 2011, in parallel with the ordinances that structured the HC in the SUS, ordinances that enabled SAD, covering municipalities with their respective multi-professional teams, EMADs and EMAPs were also enacted. Over seven years, from the resolution of the first enabling ordinance to 2018, 70 ordinances were enacted, covering 651 municipalities, with 1,000 health establishments qualified as SAD (among these UPA, hospitals, and UBS), comprising 1,361 EMADs and 727 EMAPs.

### **The volume of production and use of HC-related services and procedures**

In the search conducted in the databases of the SIS-SUS, SIH-SUS for home-based hospitalizations, and SIA-SUS for home outpatient procedures, 97,754 records of home-based hospitalizations were found from 2008 to 2016, and 4,008,612 records referring to home-based outpatient procedures from 2012 to 2016 (Table 1). This study did not aim to compare the home care modalities because databases had different coverage periods.

Regarding the distribution of home-based hospitalizations, an increase in this record was observed as of 2010 (Table 1). Although Ordinance that established home care within the SUS was enacted in 2006, the records of this activity are only available from 2008 in the SIH-SUS. The highest percentage of records (16.3%) was identified in 2011, which may be related to the period of adapting HC as a SUS care model in this same year.

As for home-based outpatient procedures, the first records appear in 2012, starting in November, which seems to justify the lower percentage (4.2%) for this year (Table 1). Ordinance No. 2,029, which established HC as a care model and created the Best at Home Program, was adopted a year earlier. A growing number of these records was observed in the following years, and was higher in 2015 (42.6%), with a sharp decline in 2016 (4.8%) (Table 1), which may be related to the process of disabling the SADs, identified in specific ordinances, for various reasons. This

certainly deserves a detailed study on the deactivation of SADs, which may explain this situation or even data reliability.

No significant difference was found between genders (Table 1) in both types of HC. The use of services by women is slightly higher, corresponding to 51.1% in home-based hospitalizations and 53.1% in home-based outpatient procedures.

Likewise, the increase in the volume of HC use was proportional to advancing ages (Table 1). Children and younger individuals' use was not comparatively important. A higher proportion of use of services was noted from the age of 50 in both modalities. Individuals above 60 years use corresponded to more than half of all services

and procedures used (Table 1). This information is in line with the emphasis given by the literature to this age group, when dealing with the objectives and to whom HC<sup>17,18</sup> is addressed. Comparatively, the 70-79 years' age group used HC the most, equivalent to 20.5% of home-based hospitalizations, and 22.4% of home-based outpatient procedures (Table 1).

The use by white individuals was predominant, corresponding to 20.4% in home-based hospitalizations and 39.6% in home-based outpatient care, followed by brown individuals, 18.8% in home-based hospitalizations, and 26.8% in home-based outpatient procedures. Noteworthy was the absence of this information in both mo-

**Table 1.** Profile of home care use. Brazil, 2008-2016.

Characteristics*	Home-based hospitalization		Home-based outpatient Care	
	n	%	n	%
<b>Total</b>	<b>95,754</b>	<b>100.00</b>	<b>4,008,612</b>	<b>100.00</b>
Year				
2008	4,824	5.0	-	-
2009	6,377	6.7	-	-
2010	11,242	11.7	-	-
2011	15,606	16.3	-	-
2012	12,577	13.1	167,965	4.2
2013	10,181	10.6	622,596	15.5
2014	10,315	10.8	1,318,271	32.9
2015	12,177	12.7	1,706,196	42.6
2016	12,455	13.0	193,584	4.8
Gender				
Male	46,779	48.9	1,874,056	46.8
Female	48,975	51.1	2,128,264	53.1
Unknown	-	-	6,292	0.2
Age group				
0 - 29 days	194	0.2	41,136	1.0
1 - 4 years	3,915	4.1	43,185	1.1
5 - 9 years	2,140	2.2	37,475	0.9
10 - 19 years	4,121	4.3	119,176	3.0
20 - 29 years	4,558	4.8	183,586	4.6
30 - 39 years	5,147	5.4	211,446	5.3
40 - 49 years	7,477	7.8	257,696	6.4
50 - 59 years	11,590	12.1	424,504	10.6
60 - 69 years	16,001	16.7	641,798	16.0
70 - 79 years	19,615	20.5	896,533	22.4
80 - 89 years	15,947	16.7	837,552	20.9
90 - 99 years	4,693	4.9	250,606	6.3
100 and over	356	0.4	19,496	0.5

it continues

**Table 1.** Profile of home care use. Brazil, 2008-2016.

Characteristics*	Home-based hospitalization		Home-based outpatient Care	
	n	%	n	%
<b>Total</b>	<b>95,754</b>	<b>100.00</b>	<b>4,008,612</b>	<b>100.00</b>
Skin color/Ethnicity				
White	19,532	20.4	1,588,032	39.6
Black	2,426	2.5	234,324	5.8
Brown	18,009	18.8	1,072,427	26.8
Yellow	1,264	1.3	33,798	0.8
Indigenous	19	0.0	318	0.0
No information	54,504	56.9	1,079,713	26.9
Principal diagnosis (Chapter ICD - 10)				
II. Neoplasms	8,939	9.3	218,992	5.5
IV. Endocrine, nutritional and metabolic diseases	7,695	8.0	182,402	4.6
V. Mental and behavioural disorders	-	-	123,736	3.1
VI. Diseases of the nervous system	11,679	12.2	601,248	15.0
IX. Diseases of the circulatory system	27,392	28.6	1,239,149	30.9
X. Diseases of the respiratory system	20,874	21.8	179,329	4.5
XII. Diseases of the skin and subcutaneous tissue	6,243	6.5	206,346	5.1
XIII. Diseases of the musculoskeletal system and connective tissue	-	-	95,151	2.4
XIX. Injury, poisoning and certain other consequences of external causes	11,064	11.6	390,294	9.7
Other	1,868	2.0	358,234	8.9
Invalid or unidentified ICD	-	-	44	0.0
Difference/inconsistency	-	-	413,687	10.3
Outcome				
Discharge	30,423	31.8	211,974	5.3
Continuing care	50,872	53.1	3,577,290	89.2
Transfer	2,548	2.7	-	-
Referral to Home-based hospitalization (AD1)	-	-	93,820	2.3
Admission to Urgent Care	-	-	13,028	0.3
Hospital admission	-	-	37,741	0.9
Administrative closure	10,340	10.8	-	-
Death	1,571	1.6	68,280	1.7
No information	-	-	6,479	0.2
Brazilian geographic region of residence				
North	1,208	1.3	155,930	3.9
Northeast	43,324	45.2	1,042,978	26.0
Southeast	21,591	22.5	2,136,830	53.3
South	12,064	12.6	457,637	11.4
Midwest	17,567	18.3	208,945	5.2
Unknown or abroad	-	-	6,292	0.2

\* Only the variables common to the databases consulted are presented.

Source: Ministry of Health. Hospital Information System (SIH/SUS) – Hospital Admission Authorization (AIH) Movement; Outpatient Information System (SIA/SUS) – Home Care Service.

dalities, mainly in home-based hospitalizations, corresponding to 56.9% of records, and 26.9% in home-based outpatient procedures (Table 1).

Most of the patients using the home care had primary diagnosis related to diseases of

the circulatory system, as per the Chapter of the International Classification of Diseases and Health-Related Problems-Tenth Revision (ICD-10), namely, 28.6% in home-based hospitalizations, and 30.9% in home-based outpatient pro-



cedures (Table 1). Respiratory system diseases were the cause of 21.8% of home-based hospitalizations, but were only 4.5% of home-based outpatient procedures, perhaps due to the complexity of this care, justifying the use of more robust technologies, thus characterizing hospitalization using medium and high complexity technologies, to the detriment of outpatient practices. Nervous system diseases were equivalent in both modalities, 12.2% for home-based hospitalizations, and 15.0% for home-based outpatient procedures. Injuries due to poisoning and other external causes corresponded to 11.6% of home-based hospitalizations and 9.7% of home-based outpatient procedures. Among the external causes, the sequelae of accidents that prevent the patient's removal to health services may justify the use of HC, a disability common to neurological and chronic pathologies, which require longitudinal and continuous care. In turn, mental and behavioral disorders were the reason for 3.1% of home-based outpatient procedures, absent among home-based hospitalizations. The musculoskeletal and connective tissue diseases represented 2.4% of home-based outpatient procedures (Table 1). These did not appear as a ground of home care but were present as a secondary diagnosis in this modality, which may be related to care for wounds and pressure sores, common to patients with restricted mobility.

A peculiarity noticed in the SIA-SUS database was the diagnostic information inconsistency in 10.3% (413,687) of the records. A more detailed analysis of this data allowed understanding that, in this database, the diagnosis is recorded in three different variables: principal ICD, related ICD and HC-ICD, the latter related to the situation or condition that motivated each of the acts/procedures intended for the patient, and this record was complete. Therefore, it only makes available the production volume and requires expertise, knowledge, and more significant management of the available data to obtain a more detailed profile of the cases and care provided.

Regarding the outcome of care, the continuing care or extended care in this modality corresponded to the most records within both modalities, 53.1% in home-based hospitalizations, and 89.2% in home-based outpatient procedures (Table 1). The discharge was relevant in the hospitalization modality (31.8%), but hardly relevant in home-based outpatient care, corresponding to only 5.3%, possibly due to the chronicity of the condition or other characteristic cases. Other results, such as transfer to another type of

service, admission to urgent care, home-based hospitalization, and administrative closure, were discreetly recorded. Deaths were also negligible, occurring in 1.6% (1,571) of home-based hospitalizations, and 1.7% (68,280) of home-based outpatient care (Table 1).

Other information allows characterizing the use profile of these services. Regarding home-based outpatient care, referral to AD1, a less complicated type of care performed by Primary Care teams, occurred in 2.3% of cases. We could also observe that the EMADs performed most services (93.3%), and only 6.7% by the EMAPs. Furthermore, 63.3% of households were not covered by the Family Health Strategy (ESF). As for the patient's origin, 54.5% of the patients attended were from PHC, 23.8% were discharged from the hospital, and only 5.7% were from urgent care services.

In the SIH-SUS, among others, there was information that complemented the understanding of how HC works, such as the length of stay in home care, where 68.6% remained in this type of care for 29 days or more, characterizing the longitudinality of this type of care. The mean stay of each patient under home-based outpatient care was 26.6 days, while the mean number of procedures given to each patient under home-based outpatient care was 8.5, and the mean number of services/visits received per patient was one visit during the approximate period of one month (26.6 days).

Of the total volume of home-based outpatient procedures (4,008,612), the most frequently performed procedures were consultation, services, and visits. First: visit/home care (18.4%), followed by home care procedures by a multidisciplinary team (13.6%), home assistance by a mid-level professional (12.6%), home visit by a mid-level professional (10.8%), dressings (10.4%), and physical therapy (6.3%). Therefore, services provided by teams of mid-level professionals prevailed, to the detriment of teams of higher-education and specialized care professionals, which may be related to the shortage of human resources.

Throughout Brazil, 69 hospitals were responsible for providing 95,754 home-based hospitalizations in the analyzed period. Regarding the ownership, 56 (81.2%) were public hospitals, and 12 (17.4%) were private non-profit. Only one private hospital was for-profit.

Regarding geographic distribution, the Northeast region concentrated the most substantial volume of home-based hospitalizations (45.2%), followed by the Southeast re-

gion (22.5%) and the Midwest (18.3%) (Table 1). Lastly, a negligible volume was found in the North region (1.3%). Although the Northeast region hosted the most significant volume of home-based hospitalizations, this modality was limited, mainly, to the state of Ceará (Graph 1), which is a situation familiar to other regions, whose volume of home-based hospitalizations was limited to specific Federative Units (UF). The North region was represented only by Pará, the Southeast recorded most home-based hospitalizations in São Paulo, the South region in Rio Grande do Sul, and the Midwest region was only represented by the Federal District (Graph 1).

Home-based outpatient care proved to be more widespread across geographic regions, with a more significant number of UFs per region. However, there are also marked differences concerning the number of procedures used between UFs, and in these, between their municipalities and health regions. More than half of the procedures were performed in the Southeast (53.3%), followed by the Northeast (26.0%) and South (11.4%) (Table 1). The Midwest and North had low representation with 5.2% and 3.9%, respectively (Table 1).

#### HC within Health Regions

The establishment of a health region, by Health Ministry decree n° 7,508, seeks to provide proximity of the different care types. In this context, the mapping of the provision of this type of care is relevant, primarily due to the current discussion on the SUS reorganization process in health regions within UFs<sup>19</sup>.

Thus, the geographic distribution of aggregate production, considering all years of study, of HC in the SUS in Brazil, by health regions, illustrates that both types of home health care (home-based hospitalization and home-based outpatient care) were limited to some areas. This reinforces the idea that access to this type of care is geographically uneven at all geographic levels: large geographic regions, UFs, municipalities, and health regions (Figures 1 and 2). Home-based hospitalization (Figure 1) has relatively more considerable gaps in supply than in home-based outpatient care (Figure 2) due to its complexity and specific regional challenges, such as those in the North. However, these care gaps are not inherent in HC, and the challenges to overcome the insufficient supply and regionalization of services are present in other types of care, as well as other sectors.

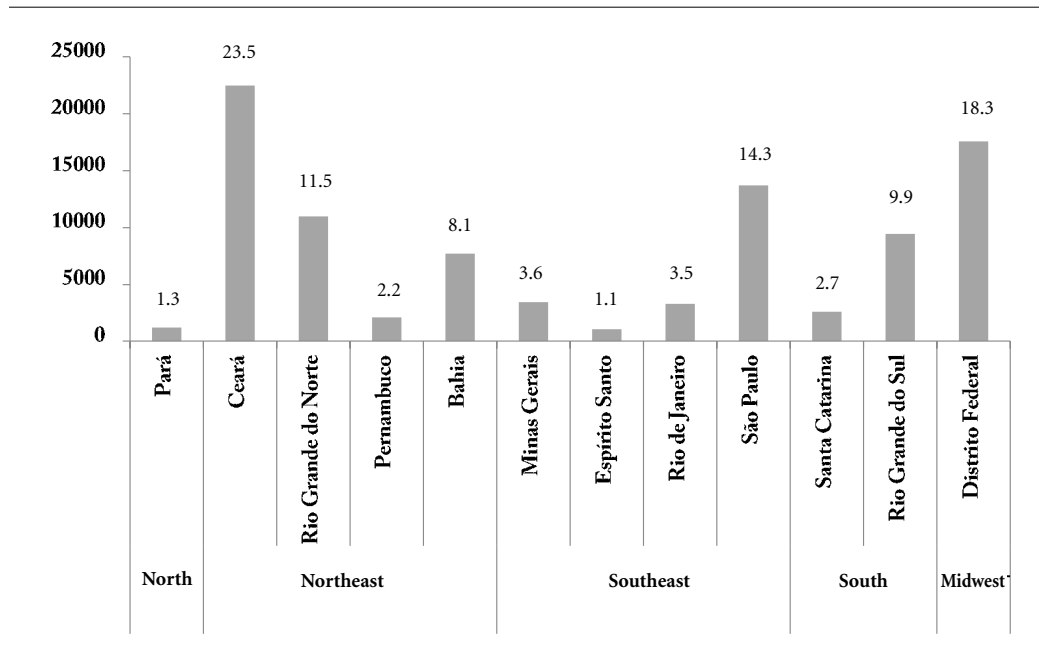
Observing the geographical distribution of both types of HC – home-based hospitalization, offered by hospitals providing this service, and home-based outpatient care, provided by the SADs, in their respective teams in the AD1 mode (in PHC), and the AD2 and AD3 modes (through EMADs and EMAPs) –, it was evident that they were concentrated in the Southeast and Northeast regions (Figures 1 and 2), and the most substantial volume of care was restricted to certain Health Regions. The Southeast Health Regions include more than half of the outpatient procedures performed by the SADs (Figure 2), while the Northeast Health Regions hosted almost half of the home-based hospitalizations (Figure 1), with emphasis on Ceará.

Thus, HC mapping allowed perceiving the existence of significant regional differences, both concerning the volume of services and procedures and the various modalities comprehensively. Most services and procedures within the scope of HC are limited to specific locations. This seems to show that, while there is already a national program that guides the provision of this type of care, the implementation of HC remains restricted to some Municipal and State Health Secretariats. Thus, until the analyzed period, this program did not gain national scope, characterizing a marked regional inequality.

#### Conclusion

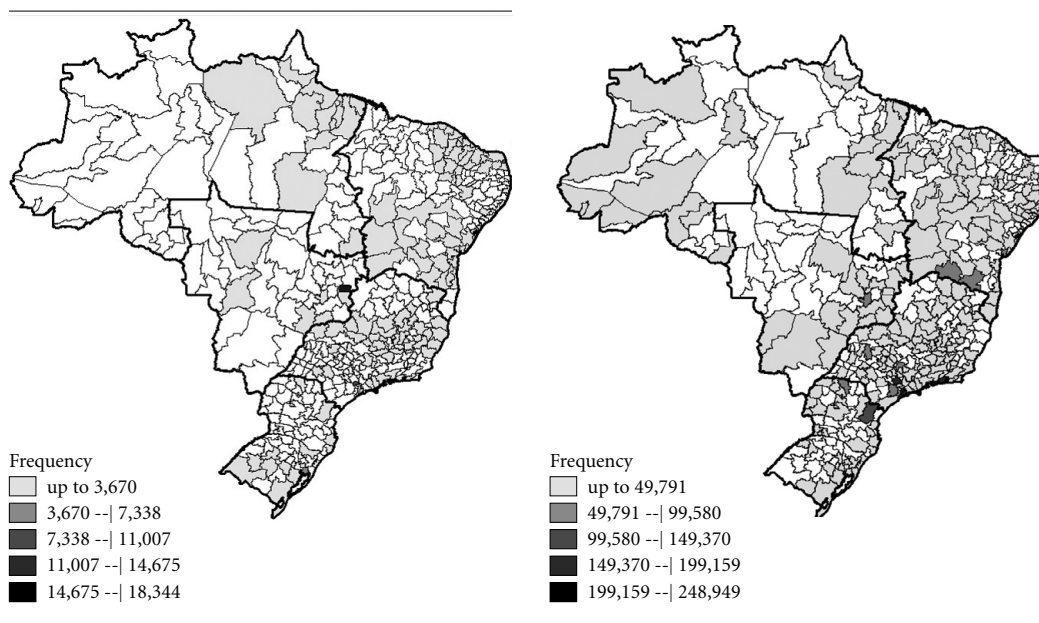
Recognizing the exploratory and descriptive nature of this study, the main limitation is the source of information used, especially regarding the underreporting of some information and different observation units in the databases: admission to SIH-SUS and procedures performed for the SIA-SUS. Notwithstanding this, the availability of information in the SIS-SUS exceeded the initial expectation, allowing outlining the profile of home care in the SUS. In general, the SIH-SUS has been used more often compared to SIA-SUS in studies since the 1990s, given that little experience has been accumulated from the SIA.

In HC, the importance of family caregivers for the quality of home care is perceived, as well as the workload of performing this function mentioned in studies related to burden and support strategies for family caregivers<sup>3,20,21</sup>. It is worth noting that the databases do not include data in this regard. However, information about the patient's level of autonomy, his family environment, home physical structure, and the care-



**Graph 1.** Percentage distribution of home-based hospitalizations by Federation Unit (UF) and geographic region. Brazil, 2008-2016.

Source: Ministry of Health – Hospital Information System (SIH/SUS) – Hospital Admission Authorization (AIH) Movement.



**Figure 1.** Distribution of home-based hospitalizations by health regions. Brazil, 2008-2016.

Source: Ministry of Health – Hospital Information System (SIH/SUS) – Hospital Admission Authorization (AIH) Movement.

**Figure 2.** Distribution of home-based outpatient procedures by health regions. Brazil, 2012-2016.

Source: Ministry of Health. Outpatient Information System (SIA/SUS) – Home Care Service.

giver would contribute to the knowledge of the singularities and needs of such a contribution in health care.

In turn, professional training aimed at understanding this new way of caring, as well as its technical specificities, emerge as a need linked to the improvement of HC as a more grounded health care model. In the field of organization and coordination of home care in the Brazilian context, it is not known, in practice, that there is a formal and continuous articulation between EMADs and EMAPs with other health services. The Family Health (eSF) and Family Health Support Center (NASF) teams perform ADI activities but incorporated into their work processes, not highlighting the existence of this structure exposed in the legislation and the production analyzed in the SIS-SUS. As evidenced in the results, we observed a lack of ESF coverage in most of the locations where the presence of EMAD and EMAP was recorded.

Preliminarily, we could also envision home-based hospitalization as continuous care of hospital care, while home-based outpatient care seems closer to a surrogate or supplementary care to outpatient care. The latter appears in a more delineated way, establishing a specific program – the *Melhor em Casa* Program. However, home-based hospitalization is not included in the instruction manuals of this Program, and appears “sidelined”.

Hardly worked on in the national literature, this study aimed to know HC from legislation and secondary data on the production of this type of

care at the national level. The findings allowed an initial diagnosis of the advances and critical nodes to its expansion. However, the information system has limitations that even deserve resources to further analyze the panorama outlined here. The follow-up and monitoring of its trend and obstacles to expansion, both in territorial scope and incorporation and consolidation as a care model in the RAS, is necessary. To this end, it is still essential to know the volume of home care provided under the Family Health Program, which has not yet been registered with the SIA.

Furthermore, many challenges contribute to the performance of home care, such as the construction of a care plan, the preparation of health professionals to assume comprehensive care, within the user’s life, and teamwork. In the case of the SUS, taking into account regional inequality and territorial coverage, this situation needs more attention, requiring the back-end support of the service network to be ready to ensure access and continuity of care timely.

In short, this work aimed to reveal how HC has been consolidated in the SUS, mainly seeking to contribute to the recognition of obstacles that can minimize geographic inequalities in the supply of this modality. The demographic and epidemiological profile establishes the mission of caring for multiple chronic diseases in continuous periods. Thus, the picture described mapped an HC restricted to some locations, describing the resources available to meet these care demands, which are growing in the Brazilian and world context.

## Collaborations

FL Rajão participated in all stages of development of the study and preparation of this paper, and M Martins participated in the design, data analysis, drafting, and critical review of the document.

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## References

1. Braga PP, Sena RR, Seixas CT, Castro EAB, Andrade AM, Silva YC. Oferta e demanda na atenção domiciliar em saúde. *Cien Saude Colet* 2016; 21(3):903-912.
2. Feuerwerker LCM, Merhy EE. A contribuição da atenção domiciliar para a configuração das redes substitutivas de saúde: desinstitucionalização e transformação de práticas. *Rev Pan-Am Salud Publica* 2008; 24(3):180-188.
3. Creutzberg M, Santos BRL. Famílias cuidadoras de pessoas idosas: relação com instituições sociais e de saúde. *Rev Bras Enferma* 2003; 56(6):624-629.
4. Kerber NPC, Kirchhof ALC, Cezar-Vaz MR. Considerações sobre a atenção domiciliar e suas aproximações com o mundo do trabalho na saúde. *Cad Saude Publica* 2008; (24)3:485-493.
5. Loyola CMD. Cuidado Continuado. In: Giovanela L, Escore IS, Lobato LVC, Noronha JC, Carvalho AI, organizadores. *Políticas e Sistema de Saúde no Brasil*. Rio de Janeiro: Editora Fiocruz; Centro Brasileiro de Estudos de Saúde; 2008. p. 959-978.
6. Brasil. Ministério da Saúde (MS). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. *Caderno de Atenção Domiciliar. Volume 1*. Brasília: MS; 2012.
7. Faria L, Calábria LKL, Amaral S. Sentimento mútuo: as relações de cuidar e ser cuidado no domicílio. In: Faria L, Calábria LKL, Alves WA, organizadores. *Envilhhecimento, um olhar interdisciplinar*. São Paulo: Editora Hucitec; 2016. p. 61-88.
8. Gleen EN. *Forced to Care. Coercion and Caregiving in America* [livro na Internet]. Cambridge, Massachusetts, Londres: Harvard University Press; 2010 [acessado 2017 Mar 8]. Disponível em: <https://caringlabor.files.wordpress.com/2012/05/forced-to-care.pdf>
9. Lorincz CY, Drazen E, Sokol PE, Neerokonda KV, Metzquer J, Toepp MV, Maul L, Classen DC, Wynia MK. *Research in ambulatory patient safety 2000–2010: a 10-year review* [documento na Internet]. Chicago: AMA; 2011 [acessado 2019 Maio 17]. Disponível em: [https://cdn.ymaws.com/npsf.site-ym.com/resource/resmgr/PDF/Research-in-Amb-Pat-Saf\\_AMAr.pdf](https://cdn.ymaws.com/npsf.site-ym.com/resource/resmgr/PDF/Research-in-Amb-Pat-Saf_AMAr.pdf)
10. Barber N. Should we consider non-compliance a medical error? *Qual Saf Health Care* 2002; 1(11):81-84.
11. Stajduhar KI. Examining the perspectives of family members involved in the delivery of palliative care at home. *J Palliat Care* 2002; 1(19):27-35.
12. Lacerda MR, Giacomozzi CM, Oliniski SR, Truppel TC. Atenção à Saúde no Domicílio: modalidades que fundamentam sua prática. *Saude Soc* 2006; 2(15):88-95.
13. Rajão FL. *Atenção Domiciliar no Brasil: estudo exploratório sobre marco legal, consolidação e utilização de serviços no âmbito do SUS* [dissertação]. Rio de Janeiro: Escola Nacional de Saúde Pública, Fiocruz; 2018.
14. Brasil. Ministério da Saúde (MS). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. *Caderno de Atenção Domiciliar. Volume 2*. Brasília: MS; 2013.

15. Brasil. Ministério da Saúde (MS). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. *Manual de Monitoramento e Avaliação do Programa Melhor em Casa*. Brasília: MS; 2014.
16. Brasil. Ministério da Saúde (MS). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. *Caderno de Atenção Domiciliar. Volume 3*. Brasília: MS; 2015.
17. Faller JW, Brusnicki PH, Zilly A, Brofman, MCBFS, Cavalhieri L. Perfil de idosos acometidos por câncer em cuidados paliativos em domicílio. *Rev Kairós Gerontol* 2016; 2(19):22-43.
18. Muniz EA, Aguiar MFS, Brito MCC, Freitas CASL, Moreira ACA, Araújo CRC. Desempenho das atividades de vida diária de idosos em Atenção Domiciliar na Estratégia Saúde da Família. *Rev Kairós Gerontol* 2016; 2(19):133-146.
19. Brasil. Ministério da Saúde (MS). Decreto nº 7.508, de 28 de junho de 2011. Regulamentação da Lei nº 8.080/90. *Diário Oficial da União*; 2013.
20. Carvalho LC. *A disputa de planos de cuidado na atenção domiciliar* [dissertação]. Rio de Janeiro: Universidade Federal do Rio de Janeiro; 2009.
21. Karsch UM. Idosos dependentes: famílias e cuidadores. *Cad Saude Publica* 2003; 3(19):861-866.
22. Brasil. Ministério da Saúde (MS). Agência Nacional de Vigilância Sanitária (Anvisa). Resolução RDC nº 11, de 26 de janeiro de 2006. *Diário Oficial da União*; 2006.
23. World Health Organization (WHO). *Home-based and long-term care: home care issues at the approach of the 21th century from a World Health Organization perspective - a literature review*. Geneva: WHO; 1999.
24. Brasil. Ministério da Saúde (MS). Secretaria de Atenção à Saúde. Departamento de Atenção Hospitalar e de Urgência. *Segurança do paciente no domicílio*. Brasília: MS; 2016.
25. Wealth Canada. Policy and Consultation Branch. *National health expenditures in Canada 1975-1996: fact sheets* [página na Internet]. Ottawa: Wealth Canada; 1997 [acessado 2006 Jul 7]. Disponível em: <http://socialpolicy.ca/cush/m7/healthfact.pdf>
26. Ryu H, An J, Koabyashi M. Home health nursing care agenda based on health policy in Korea. *Nurs Health Sci* 2005; 7(2):92-98.
27. Thomé B, Dykes AK, Hallberg IR. Home care with regard to definition, care recipients, content and outcome: systematic literature review. *J Clin Nurs* 2003; 12(6):860-872.
28. Ribeiro CA. *Assistência domiciliar: uma 'nova' modalidade de atenção à saúde* [página na Internet]. [acessado 2004 Ago 5]. Disponível em: <http://www.unimeds.com.br/conteudo/ME01.htm>
29. Mazza MMPR. *A visita domiciliária como instrumento de assistência de saúde* [página na Internet]. [acessado 2004 Jun 1]. Disponível em: <http://www.fsp.usp.br/MAZZA.htm>
30. Freitas AV, Bittencourt CM, Tavares JL. Atuação da enfermagem no serviço de internação domiciliar: relato de experiência. *Rev Baiana Enferm* 2000; 13(1/2):103-107.
31. Murashima S, Nagata S, Magilvy JK, Fukui S, Kayama M. Home care nursing in Japan: a challenge for providing good care at home. *Public Health Nurs* 2002; 19(2):94-103.
32. Lacerda MR. *Tornando-se profissional no contexto domiciliar: vivência do cuidado da enfermeira* [tese]. Florianópolis: Universidade Federal de Santa Catarina; 2000.
33. Nogueira JM. Enfermos crônicos domiciliares: valorização integral físico-cognitiva e caídas durante 3 anos de seguimento. *Atencion Primária* 2000; 25(3):16-17.

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