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Availability of palliative care Cancer services in Brazil

Disponibilidad de cuidados paliativos de los servicios oncológicos en Brasil

Cledy Eliana dos Santos
Community Health Service and Palliative Care Service, Hospital Nossa Senhora da Conceição, Brasil.
cledy.eliana@gmail.com

José Manuel Peixoto Caldas
CINTESIS, University of Porto, Portugal.
jmpeixotocaldas@gmail.com

José Américo Serafim
Ministry of Health, Brasil.
jaserafim@gmail.com

Newton Barros
Palliative Care Service, Hospital Nossa Senhora da Conceição, Brasil.
newbarros74@gmail.com

Atamiro da Costa Pereira
Director of the CINTESIS, University of Porto, Portugal.
altamiro@med.up.pt

Marcelo Eduardo Zanella Capra
Oncology Service, Hospital Nossa Senhora da Conceição, Brasil.
marcelocapra@hotmail.com

Airton Stein
Community Health Service and Teaching and Research Management, Hospital Nossa Senhora da Conceição, Brasil.
astein@ghc.com.br

Alberto Freitas
CINTESIS, CIDES, University of Porto, Portugal.
alberto@med.up.pt

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Abstract

It has been a difficult task to define the number of patients in need of palliative care, the necessary resources and the specific criteria to structure and adapt palliative care services in Brazil. Until now the quantification of palliative care needs in our country has been estimated in an isolated way and based on international experiences. However, there are doubts about the applicability of these parameters considering the population and territorial dimensions, as well as the regional diversities. The analysis of the population morbidity and mortality profiles is necessary to the establishment of possible parameters to be employed for the assistance in palliative care, such as hospital admissions for the treatment of clinical intercurrences of cancer patients. Aims: To develop estimates of the current situation, the coverage and the need for palliative care services. Identify the number of hospitals that admitted potential patients with palliative care needs and the number of hospital beds used for the hospitalizations. Methods: Retrospective and observation analysis of the hospital admission registers of cancer patients were performed to verify the number of cancer patients in need of palliative care and the number of clinic hospital beds used yearly to admit these patients. Data on hospital admission of cancer patients, like average length of stay and hospital mortality were used. Results: Between 2008 and 2016, were registered in the Hospital Information System of SUS (SIH-SUS) 1,7 million hospitalizations for treatment of clinical intercurrence of cancer patient. These admissions were identified on 3,374 different health units around the country. An average of 91% of all hospitalizations for treatment of clinical intercurrence of cancer patient were registered in 380 hospitals Conclusions: To improve the quality of life, relieve physical suffering, cater for the psychological, spiritual and social needs of people with severe and advanced diseases, as well as to provide support to families and caregivers, it is indispensable to consider the existing models of health care. The inclusion or expansion of palliative attention meets the size, nature and severity of the needs of cancer patients.

Key words: Cancer, Hospital Admissions, Estimated palliative care needs, Hospital beds for palliative care

Resumen

Definir el número de pacientes que necesitan cuidados paliativos, los recursos necesarios y los criterios específicos para estructurar y adaptar los servicios de cuidados paliativos en Brasil ha sido una tarea difícil. Hasta el momento, la cuantificación de las necesidades de cuidados paliativos en nuestro país ha sido estimada de un modo aislado y se ha basado en experiencias internacionales. Sin embargo, hay dudas sobre la aplicabilidad de esos parámetros considerando la población y las dimensiones territoriales, tan bien como las diversidades regionales. El análisis de los perfiles de morbilidad y mortalidad de la población es necesario para el establecimiento de los posibles parámetros para ser empleados en la asistencia a cuidados paliativos, como las admisiones hospitalarias para el tratamiento de las patologías clínicas asociadas a los pacientes de cáncer. Objetivos: Desarrollar una estimación de la situación, la cobertura y las necesidades actuales de servicios de cuidados paliativos. Identificar el número de hospitales que admiten pacientes potenciales con necesidades de cuidados paliativos y el número de camas usadas para las hospitalizaciones. Métodos: Análisis retrospectivo y observación de los registros de admisiones hospitalarias de pacientes de cáncer donde se ha comprobado el número de pacientes de cáncer con necesidad de cuidados paliativos y el número de camas utilizas anualmente para admitir a esos pacientes. Se han usado datos sobre admisiones de pacientes con cáncer, como duración media de la estancia y la mortalidad hospitalaria. Resultados: Entre 2008 y 2016 se registraron 1,7 millones de hospitalizaciones para el tratamiento de patologías clínicas asociadas a pacientes con cáncer en el Sistema de Información Hospitalaria de SUS (SIH-SUS). Esas admisiones fueron identificadas sobre 3.374 diferentes unidades de salud en todo el país. Aproximadamente el 91% de las hospitalizaciones para el tratamiento de patologías clínicas asociadas a pacientes de cáncer se registraron en 380 hospitales. Conclusiones: Para mejorar la calidad de vida, aliviar el sufrimiento físico, cubrir las necesidades psicológicas, espirituales y las necesidades sociales de la gente con enfermedades severas y avanzadas, tan bien como proporcionar apoyo a las familias y cuidadores, es indispensable considerar la existencia de modelos de cuidado de la salud. La inclusión o expansión de la atención paliativa cumple el tamaño, la naturaleza y severidad de las necesidades de los pacientes de cáncer.

Palabras clave: Cáncer, hospitalizaciones, estimación de necesidades de cuidados paliativos, camas de hospital para cuidados paliativos

Sumario

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1. Introducción

The worldwide need to provide palliative cancer care to relieve the suffering of patients and families living with cancer is greater than ever. In this context what is the true reality of Brazil, with regard to cancer palliative care policy knowing that in the year 2016, nearly 600,000 Brazilians have developed new cases of cancer, according to results provided by the National Cancer Institute, which relates the new cases of the disease with increased life expectancy, urbanization and globalization. We are therefore faced with a real health pandemic with strong social and economic consequences in a country of continental dimensions.

Parameters for health-care coverage, planning, control and evaluation of palliative care needs in Brazil are based mainly on international models and studies.

According to the database of the Brazilian Mortality Information System (SIM-SUS), 1.26 million (1,264,173) people have died in Brazil in 2015, being the primary cause the cardiovascular diseases (349,642), followed by cancer (209,780), external causes (152,135), respiratory diseases (149,541) and diabetes (59641).

Grouping together these four main causes, apart from the external causes, we had at least 768,604 (61%) people in 2015 that could profit from end-of-life palliative care (Brazil, Ministry of Health, 2017a).
Within the framework of chronic diseases, malignant tumors deserve a differentiated approach, for its high incidence, prevalence, mortality allied to a large social, emotional and institutional burden and consume of great amounts of financial resources (National Cancer Institute José Alencar Gomes da Silva, 2014; Barbosa et al., 2015).

Although the public health system in Brazil counts on a standard of excellence for the assistance of high complexity diseases, like AIDS and cancer, the estimate of necessary resources to dimension and adequate the practice of palliative care has been a hard task.

The Brazilian Ministry of Health has been formally consolidating palliative care in the country's health system context, through decrees, documents and programs. However, several factors, which cannot be ignored or minimized, like the lack of policy and national strategy for the organization of the service network of palliative care, contribute to this difficulty, as well as the diversity of the population's demand for this modality of assistance at the several levels of health care.
The first quantification of the needs of palliative care in Brazil was presented more than a decade ago. Study conducted by Maciel et al. (2006) and Maciel (2009), using national mortality data recorded in 2004, was related to international parameters to estimate population with palliative care needs in Brazil.
The planning of health assistance in Brazil has been guided, since the beginning of the eighties (1982), by parameters destined to estimate the necessities of health assistance of the population regarding medical consultations, procedures, hospital admissions, the distribution of care resources and the production capacity.

According to data of the Brazilian Ministry of Health, the National Health System covers 95% of the population in primary care, 70% in secondary care, and 90% in high complexity (Brazil, Ministry of Health, 2000).

The parameters of assistance of the Brazilian National Health System (SUS), which are considered as evaluation tools, as dimensioning of the health-care coverage and as productivity of the health-care systems, offer fundamental subsidies in the orientation of administrators for the analysis of the needs of health assistance for the population, such as: offer and adequacy of health services, planning and monitoring.

Studies, estimates and projections about the definition of the number of hospital beds (general and specialized) necessary to serve the Brazilian population date back to the fifties. However, until now, the definition of this measure continues to be a hard task. That is why the use of international data becomes a common practice, even though these data can be criticized, because they do not meet the real demand, considering the population, cultural and epidemiologic diversity of the different regions of the country (Gonçalves et al., 1972; Brazil, Ministry of Security and Social Assistance, 1982; Brazil, Ministry of Health, 2002, 2015a, 2015b, Brazil, 2017).

According to data of the National Academy of Palliative Care (ANCP), in 2004 there were about 40 palliative care services in Brazil, most performed only in outpatient and home care. The availability of specialized hospital beds was minimal (about 300 beds) and restricted to big cities like Rio de Janeiro, São Paulo, Barretos, Campinas, Brasília, Curitiba, Fortaleza, Manaus, and Porto Alegre (Maciel et al., 2006).
To carry out the estimation of the population in need of palliative care, it was considered that, for each group of 1 million inhabitants, there are 1000 patients per year with indication of palliative care. In 2004, the Brazilian population was of 182,9 million inhabitants, requiring a health services organization with ability to meet 182,900 people/year with inclusion in palliative care needs.

In relation to the number of hospital beds required for the assistance of people with palliative care needs, the United Kingdom (UK) parameter was used as the estimate model: 50 hospital beds for every million inhabitants, distributed in units of 10 to 15 beds (Finlay, 2001; Lupu, 2010).

In this case in Brazil, it would take 9,145 hospital beds distributed among the 610 and 914 inpatient units. The need for community-level care (primary care) was calculated by the English parameter of 6 home care teams for every million inhabitants, being then necessary 1,087 home care teams. Starting from the estimate of needs of palliative care held for the year 2004 and compared with the situation of 2014, we found the situation described in Table 1.

Table 1. Palliative Care Needs: Required Coverage Parameters (2004 & 2014)

COVERAGE PARAMETERS REQUIRED			
Variable	**PARAMETER UK**	**2004**	**2014**
Population	For each group of 1 million inhabitants, there are 1,000 patients per year with palliative care needs.	182,9 million	202,8 million
Hospital beds	50 hospital beds/million inhab	9,145 hospital beds	10,100 hospital beds
Inpatient units	Inpatient units (10 to 15 beds)	610 to 914 inpatient units	673 to 1010 inpatient units
Home care teams	6 home care teams/million inhab	1,087	1,212

Source: 1) Maciel et al. (2006); 2) Authors comparison.

The aims of the study were 1) To analyze the movement of the hospital admissions for the treatment of clinical intercurrences of cancer patients, between 2008 and 2016, so that it is possible to verify the use of general hospital beds for this procedure; 2) To identify the demand of patients who were candidates to the modality of palliative care.

2. Methodology

Retrospective and observation analysis of the hospital admission registers of cancer patients were performed.

The data were obtained from the data system of the Health Informatics Department of SUS (DATASUS), collected from the Hospital Information System of the Brazilian National Health System (SIH/SUS).

The whole process of the Hospital Information System of the Brazilian National Health System is based on the Hospital Admission Authorization (AIH), which includes patient and hospitalization data, description of diseases and hospital mortality, reference of the hospital assistance, epidemiological surveillance, as well as the validation of other health information systems (Paim et al., 2011; Brazil, Ministry of Health, 2013, 2017a).

The parameters used for the planning of the health assistance of the Brazilian Health System are based on data and models internationally recognized: World Health Organization (OMS) and Pan American Health Organization (OPAS) and national historical epidemiological and demographics series, incidence estimates, statistics on services provided for SUS users, number of hospital admissions, outpatient consultations and other health procedures performed, including diagnose services, therapy, studies and expert opinions (Brazil, Ministry of Security and Social Assistance, 1982; Brazil, Ministry of Health, 2002).

The calculation of the coverage of hospital admission in Brazil estimated in the Decree 1101/2002 considered that, in general, 7% to 9% of the Brazilian population needed hospital admission during the year, in a particular region (Brazil, Ministry of Security and Social Assistance, 1982; Brazil, Ministry of Health, 2002).

Need of Hospital Beds: OMS proposes a rate of 3 to 5 hospital beds for each thousand inhabitants. In Brazil, according to the parameters of hospital assistance, the need of hospital beds is estimated as follows: a) Total of hospital beds = 2.5 to 3 hospital beds for each 1,000 inhabitants; b) ICU beds: it is calculated, on average, the need of 4% to 10% of the total of hospital beds (average related to big municipalities, regions etc.) (Brazil, Ministry of Health, 2002, 2015a; França et al., 2012).

In the period from 1990 to 2009, there were a reduction of 39% of the number of hospital beds in Brazil and, since the beginning of the new millennium, it does not reach the rate that OMS proposes, from 3 to 5 hospital beds for each thousand inhabitants (Table 2).

Table 2. Hospital Beds in Brazil: Distribution for 1,000 population

	Hospital beds by region					
Year	North	Northeast	Southeast	South	Midwest	Brazil
1990	2,15	2,92	4,2	4,18	4,49	3,71
1992	2,25	3,06	4,1	3,98	4,19	3,66
1999	2,24	2,74	3,03	3,31	3,46	2,96
2002	2,05	2,5	2,75	3,08	3,05	2,7
2005	1,85	2,27	2,44	2,76	2,62	2,41
2009	1,84	2,02	2,35	2,65	2,32	2,26

Source: IBGE, Pesquisa de Assistência Médico-Sanitária, 1990, 1992, 1999, 2002, 2005 (apud Brazil, Ministry of Health, 2011).

Considering the difficulty of defining the number of hospital beds needed for the admission of cancer patients with palliative care needs in Brazil, the research group decided to verify the number of clinic hospital beds used yearly to admit these patients. Data on hospital admission of cancer patients, like average length of stay and hospital mortality, were used.

The records of hospital admissions of cancer patients, hospital mortality and national register of death, hospitals network, hospital beds and the distribution of patients through the hospital institutions for the "Treatment of Clinical Intercurrences of Cancer Patient" were obtained from the database of the Health Informatics Department (DATASUS) of the Ministry of Health. Historical series of hospitalization related to diseases causes in Brazil during this period (2008-2016), according to the 10th revision of international classification of diseases (ICD-10), were also calculated (Lima y Queiroz, 2014).

To identify the hospital units that registered the admission of cancer patients and the number of hospital beds used, databases of the hospital information system and the National Register of Health Establishments (CNES-DATASUS) were analyzed.

The estimation of the size of the Brazilian cancer population in need of palliative care was based on models of WHO, Gomez-Batiste, Higginson and the Brazilian Parameter of the Ministry of Health (MOH) to identify the number of people who were possibly in need of oncologic palliative care. Data on the number and causes of deaths were derived from death registration and hospital admission data.

The following simulation models assumed the mortality data to estimate needs of palliative care: 1) WHO: at least 80% of terminal cancer patients will require palliative care; 2) Gomez-Batiste: 60% of deaths; and 3) Higginson: number of people with selected causes of death (cancer and non-cancer diagnoses), multiplied by standard symptom prevalence (estimated from systematic reviews). Here we used the pain prevalence of international studies.

The Brazilian parameter uses hospital admission data of cancer patients for treatment of clinical intercurrence related with the diseases (Higginson, 1997; World Health Organization, 2007; Gomez-Batiste et al., 2012; Brazil, Ministry of Health, 2015c).

3. Statistical Analysis

Descriptive statistics were used as range of variation, proportions and averages and other indicators that can serve as parameters to other studies. Because it is an intentional sample, not a probability one, the statistical inference was not performed.

4. Results

In 2004, 1,024,073 deaths were registered in Brazil, being the first cause cardiovascular diseases, with 285,543 (27.9%) deaths; followed by neoplasms, with 140,801 (13.7%) deaths; external causes, with 127,470 (12.4%) deaths; and respiratory diseases, with 102,168 (10%) deaths. In the study, the leading causes of death were grouped, with the exception of maternal and external causes, resulting in 528,512 causes supposedly amenable to palliation.

In 2014, 1,227,039 deaths were registered in Brazil: cardiovascular diseases, with 340,284 (27.7%) deaths; followed by neoplasms, with 201,968 (16,5%) deaths; external causes, with 156,642 (12,8%); and respiratory diseases, with 139,045 (11,3%) deaths, resulting in 681,297 (55.5%) causes with indication of palliative care. In conclusion, between 2004 and 2014, the needs of palliative care had an increase of 28.9% in Brazil (Table 3).

Table 3. Needs of palliative care in Brazil (2004 and 2014)

YEAR	Population (million hab)	Total mortality	Cardiovascular diseases	Cancer	Respiratory diseases	External causes
2004	182,9	1,024,073	285,543 (27.9%)	140,801 (13.7%)	102,168 (10%)	127,470 (12.4 %)
2014	202,8	1,227,039	340,284 (27.7%)	201,968 (16,5%)	139,045 (11,3%)	156,642 (12,8%)

Source: 1) National Mortality Information System of SUS (SIM – DATASUS) (Brazil, Ministry of Health, 2017a); 2) Maciel et al. (2006); 3) Authors comparison

4.1. Hospital units with register of cancer patient admitted for treatment of clinical intercurrence: analysis of data

Study conducted by the authors, through the National Register of Health Establishments (CNES), about hospital resources, during the month of June of 2017, showed that, in Brazil, at that time, whereas the register is updated monthly, there was a total of 6,498 hospitals, being 5077 (78.1%) general hospitals, 991 (15.2%) specialized hospitals and 430 (6.7%) day-hospitals. In relation to hospital beds, a total of 438,230 beds was observed, being 304,692 (69.5%) of them SUS beds and 133,538 (30.5%) not SUS beds, including all types of beds: General, specialized, intensive care unit (ICU), long stay, day-hospital, psychiatric, obstetric, pediatric, etc. (De Negri Filho et al., 2012; Brazil, Ministry of Health, 2017c).

Between 2008 and 2016, were registered in the Hospital Information System of SUS (SIH-SUS) 1,7 million hospitalizations for treatment of clinical intercurrence of cancer patient. These admissions were identified on 3,374 different health units around the country.

Of these 3,374 hospital units, those who had recorded at least 60 admissions/year (5 admissions per month) were identified, this resulted in 432 hospitals. Between 2008 and 2016, an average of 91% of all hospitalizations for treatment of clinical intercurrence of cancer patient were registered in 380 hospitals, on average (Table 4).

Table 4. Hospital Admission of Cancer Patient for Treatment of Clinical Intercurrences

Year	Number of admissions	Number Hospital admitting patient	Selected Hospital with 60 or + admission/year	Number of cancer patients admitted in Selected Hospitals (60 or + admission/year)	% of cancer patients admitted in Selected Hospitals
2008	131,468	1,542	300	118,756	90%
2009	150,482	1,691	335	135,039	90%
2010	162,123	1,799	368	145,028	89%
2011	174,822	1,807	373	158,807	91%
2012	192,772	1,820	387	175,984	91%
2013	209,216	2,016	394	191,011	91%
2014	220,713	2,069	409	201,149	91%
2015	237,647	2,083	419	217,603	92%
2016	242,151	2,083	432	222,130	92%
Total/Average	1,721,394		380	1,565,507	91%

Source: Hospital Information System of SUS (SIH-SUS) (Brazil, Ministry of Health, 2017b).

In the period between 2008 and 2016, an average of 187.8 thousand deaths by cancer were registered in the Brazilian Mortality Information System. The estimate of people who died with palliative care needs varied: 112.7 thousand (Gomez-Batiste), 149.2 thousand (WHO), and 155.1 thousand (IJ Higginson) (Table 5).

Table 5. Needs of Palliative Care According to Total Cancer Death/Year

Year	Total Cancer Deaths/Year (A)	Estimating needs of palliative care		
		WHO (A*0.8)	Gomez-Batiste (A*0.6)	I J Higginson (A*0,84)
2008	167,677	134,142	100,606	140,849
2009	172,255	137,804	103,353	144,694
2010	178,990	143,192	107,394	150,352
2011	184,384	147,507	110,630	154,883
2012	191,577	153,262	114,946	160,925
2013	196,954	157.,563	118,172	165,441
2014	200,979	160,783	120,587	168,822
2015	209,780	167,824	125,868	176,215
TOTAL	1,502,596	1,034,253	901,556	1,262,181
Average	187,825	149,216	112,695	155,138

Source: Mortality Information System of SUS (SIM-SUS/ DATASUS) (Brazil, Ministry of Health, 2017a).

In the same period, 660.8 thousand hospital admissions per year, of cancer patients, were registered, of which 7.9% (52208) resulted in death. The estimate of patients who needed palliative care at the end of life varied: 31.3 thousand (Gomez-Batiste), 41.7 thousand (WHO), and 43.8 thousand (IJ Higginson) (Table 6).

Table 6. Needs of Oncologic Palliative Care According to Hospital Mortality/Year

YEAR	Hospital Admission Oncologic Patient	Hospital Death Oncologic Patient (A)	Estimating needs of palliative care		
			WHO (A*0.8)	Gomez-Batiste (A*0.6)	I J Higginson (A*0,84)
2008	546255	39168	31334	23501	32901
2009	575876	44129	35303	26477	37068
2010	605405	46937	37550	28162	39427
2011	624663	49023	39218	29414	41179
2012	655357	51642	41314	30985	43379
2013	692401	55340	44272	33204	46486
2014	726216	57680	46144	34608	48451
2015	756307	62147	49718	37288	52203
2016	764976	63803	51042	38282	53595
TOTAL	5.947.456	469.869	375.895	281.921	394.690
Average	660,828	52,208	41,766	31,325	43,854

Source: Hospital Information System of SUS (SIH-SUS) (Brazil, Ministry of Health, 2017b).

The Brazilian studies of MOH estimate that 90% of cancer patients admitted in hospital for treatment of clinical intercurrence should be considered in need of palliative care. This parameter is addressed to morbidity and not mortality.

In the period from 2008 to 2016, approximately 191,3 thousand hospital admissions per year, of cancer patients, were registered, of which 22% (42,097) resulted in death. The estimate of patients who needed palliative care at the end of life varied: 25,3 thousand (Gomez-Batiste), 33,7 thousand (WHO), and 35,4 thousand (IJ Higginson). (Table 7)

By the Brazilian parameter which uses hospital admission data, and not mortality data, the estimate was as follows: 154,9 thousand cancer patients who were admitted for treatment of clinical intercurrences needed palliative care, not necessarily end of life care, considering that those patients were in different stages of the illness. (Table 7).

Table 7. Hospital Admission of Cancer Patients for Treatment of Clinical Intercurrence

YEAR	Hospital Admission (A)	Hospital Death (B)	Estimating Needs of Palliative Care			
			WHO (B*0.8)	Gomez-Batiste (B*0.6)	I J Higginson (B*0,84)	Parameter Brazil (A*0,9)
2008	131,468	29,500	23,600	17,700	24,780	118,321
2009	150,482	34,771	27,817	20,863	29,208	135,434
2010	162,123	36,742	29,394	22,045	30,863	145,911
2011	174,822	38,720	30,976	23,232	32,525	157,340
2012	192,772	41,668	33,334	25,001	35,001	173,495
2013	209,216	45,515	36,412	27,309	38,233	188,294
2014	220,713	47,364	37,891	28,418	39,786	198,642
2015	237,647	51,633	41,306	30,980	43,372	213,882
2016	242,151	52,958	42,366	31,775	44,485	217,936
Total	1,721,394	378,871	303,097	227,323	318,252	1,549,255
Average	191,266	42,097	33,677	25,258	35,361	172,139

Source: Hospital Information System of SUS (SIH-SUS) (Brazil, Ministry of Health, 2017b).

In the period of 2008 to 2016, an average of 4,181 clinical hospital beds were used each year for treatment of clinical intercurrence of cancer patients.

By analyzing the variation of use of hospital beds by region, we found that, in total, there has been an increase of 55% of the beds used in the period of 2008 to 2016.

The biggest variation occurred in the North region (96%), followed by the Northeast (66%) and Southeast (60%). The smallest variations were observed in the Midwest regions (45%) and in the South (33%). (Table 8).

Table 8. Clinic hospital beds used by cancer patients in treatment of clinical intercurrence

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	Variation
Midwest	213	253	247	220	242	245	252	274	309	45%
Northeast	648	749	747	711	787	902	959	1046	1074	66%
North	126	165	194	193	198	219	219	235	247	96%
Southeast	1491	1714	1817	1843	2040	2200	2288	2426	2388	60%
South	732	811	788	784	819	901	955	984	972	33%
Grand Total	3210	3692	3793	3751	4087	4468	4674	4965	4989	55%

Source: Hospital Information System of SUS (SIH-SUS) (Brazil, Ministry of Health, 2017b).

4.2. Palliative Care Services Available in Brazil

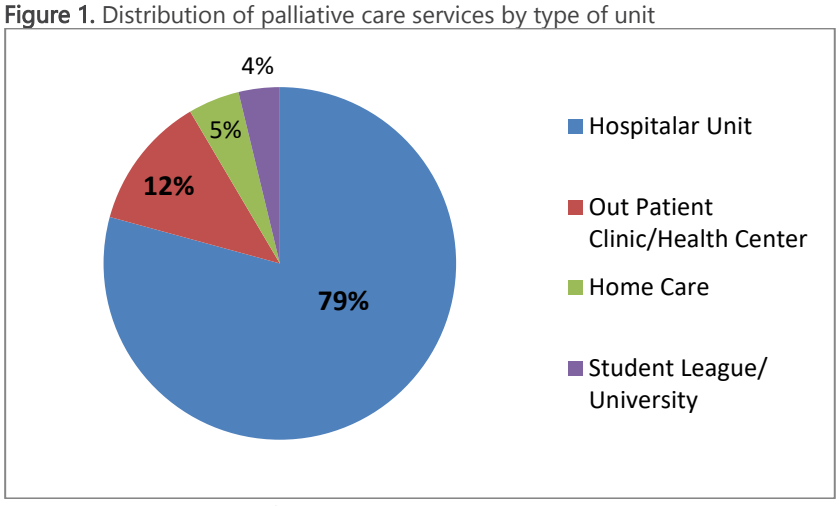
In the analysis of the directory of palliative care services registered at the National Academy of Palliative Care (December 2016), 115 institutions were identified. Of the total of registered institutions, 106 (92.2%) were grouped by type of service: 84 (79.2%) hospital units, 13 (12.3%) health centers/clinics, 5 (4.7%) home care services, and 4 (3.8%) student leagues in University (Table 9) (Figure 1).

Table 9. Units of palliative care services

Type of service	Number	%
Hospitalar Unit	84	79.2%
Out Patient Clinic/Health Center	13	12.3%
Home Care	5	4.7%
Student League/ University	4	3.8%
Total	106	100

Source: National Academy of Palliative Care (Brazil) (Academia Nacional de Cuidados Paliativos, 2017).

Figure 1. Distribution of palliative care services by type of unit



Source: National Academy of Palliative Care (Brazil) (Academia Nacional de Cuidados Paliativos, 2017)

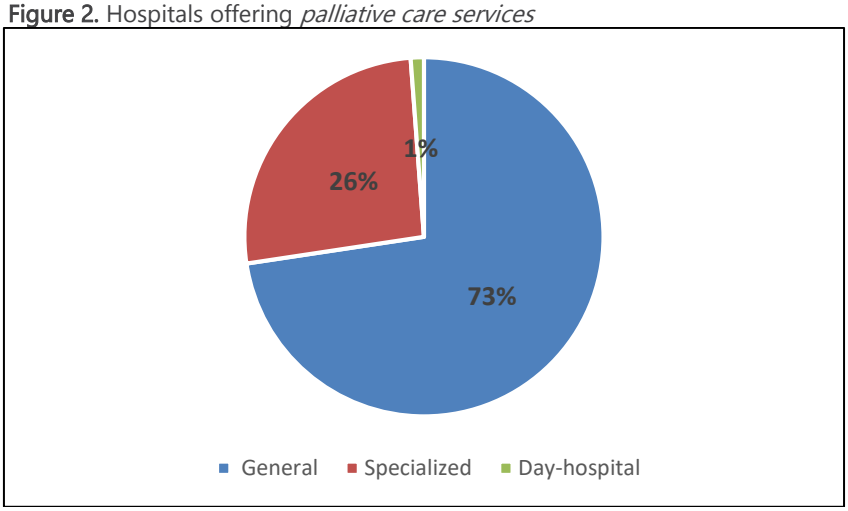
Of the 84 palliative care services located in hospitals, 61 (73%) are in general hospitals, 22 (26%) in specialized hospitals, and 1% in day hospitals (Table 10) (Figure 2).

Table 10. H*ospitals* offering *palliative care services*

Type of Hospital	Number	%
General	61	73%
Specialized	22	26%
Day hospital	1	1%
Total	84	100%

Source: National Academy of Palliative Care (Brazil) (Academia Nacional de Cuidados Paliativos, 2017).

Figure 2. Hospitals offering *palliative care services*



Source: National Academy of Palliative Care (Brazil) (2017).

The hospital sector in Brazil consists of three main subsectors: public hospitals owned and managed by federal, state or municipal health authorities; private hospitals (most under contract to SUS); and philanthropic hospitals (La Forgia & Couttolenc, 2008).

By relating the distribution of palliative care services located in hospitals to the kind of administration, we observed that, of the total 84 services registered, 47 (56%) are in public hospitals, 31 (37%) are in private hospitals, and 1 (1.2%) is in a philanthropic institution. We did not find information about 4 institutions (3 general hospitals and 1 specialized hospital) (Table 11).

Table 11. Hospital Palliative Care Services by kind of administration

Kind of Administration	*Hospital Palliative Care Services*	
	Number	%
Public	47	56%
Private	31	37%
Philanthropic	1	1.2%
No information	4	5%

Source: National Academy of Palliative Care (Brazil) (2017); National Register of Health Establishments of the National Health System (CNES-SUS) (Brazil, 2017).

Of the total of registered institutions, 96 (83.5%) were listed in the National Register of Health Establishments of the National Health System (CNES-SUS), of which 34 (35.4%) are located in reference

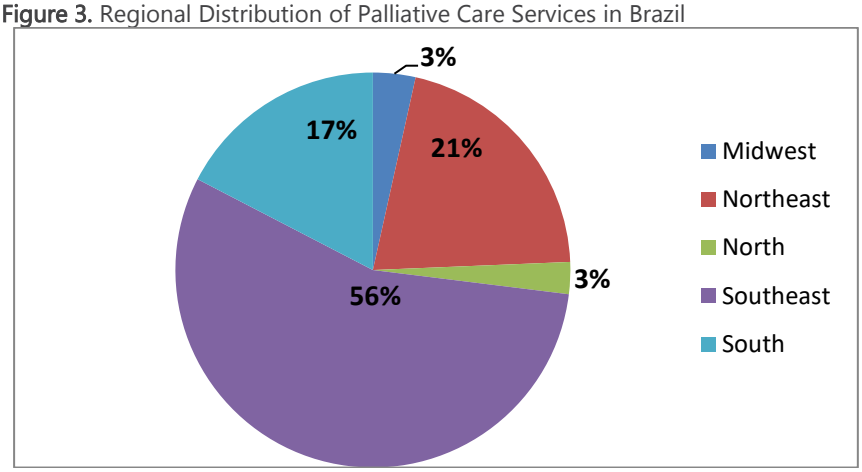
centers for cancer treatment. In Brazil, 73% of palliative care services are located in the Southeast and South regions (Table 12) (Figure 3; 4).

Table 12. Location of Palliative Care Services

Region	Number of services	%
Midwest	4	3%
Northeast	24	21%
North	3	3%
Southeast	64	56%
South	20	17%
Total	115	100%

Source: National Register of Health Establishments of the National Health System (CNES-SUS) (Brazil, 2017).

Figure 3. Regional Distribution of Palliative Care Services in Brazil



Source: National Register of Health Establishments of the National Health System (CNES-SUS) (Brazil, 2017).

Figure 4. Spatial Distribution of Palliative Care Services in Brazil

Source: National Academy of Palliative Care (Brazil) (2017).

5. Discussion

To determine the population in need of palliative care, the structure of services, including the number of available hospital beds, and the qualified staff are significant challenges for the Brazilian public health system.

With the simulation of international parameters to scale the needs for palliative care in Brazil, we can see where we are and how much it is necessary to achieve a reasonable organization and structure of health care.

Thus, it becomes crucial to promote a reflection about the existing assistance model, as well as to know the dimension, the nature, and the severity of people's needs regarding integral care when chronic diseases start to affect.

It is necessary to take into consideration that every person with serious diseases, advanced diseases, with no chance of therapeutic cure, with life limitations, as well as people with severe sequelae caused by several situations, require an integral assistance that provide the best possible quality of life with the relief of suffering. The modality of assistance in palliative care, with its approach focused on the patients and their families, meets this necessity.

6. Conclusions

In Brazil, the organization of services in palliative care is still far from meeting the needs of the population, due to the lack of a structured policy, the low service offer, the lack of qualified professionals, and the limited support for the researches and the studies that would enable to know the need and to meet the existing demand.

People who face progressive diseases that limit life, with or without associated comorbidities, require different levels of clinical, emotional, social, and spiritual assistance over the course of the disease. Besides the specified care and treatments related to the underlying disease, it is common that they have needs, which are several times referred as end-of-life palliative care, especially when they get close of the last year of life.

Even though most part of palliative care services in our country is directed mostly to patients with advanced cancer, we call attention to the fact that the provision of this modality of assistance is considered as being a responsibility of the whole health system and not only of specialized palliative care services.

To promote the dispensation of quality palliative care, the health system has to invest in the education and qualification of professionals by means of sensitizing and training multidisciplinary teams, as well as to stablish a close cooperation with the caregivers, the families, the social services and the special health units.

To estimate the demand of the population with palliative care needs and to dimension the number of necessary services, census data of overall hospital admissions of cancer patients, of mortality, and of distribution of the service network have to be used to define the parameters.

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Brief CV of the authors

Cledy Eliana dos Santos is Community Health Service and Palliative Care Service in Hospital Nossa Senhora da Conceição, Grupo Hospitalar Conceição, Brazil.

José Manuel Peixoto Caldas is Professor of Postgraduate Program in Collective Health from UNIFOR and member of CINTESIS, University of Porto, Portugal.

José Américo Serafim is member of the Health Informatics Department of the Brazilian Health System, SUS (DATASUS), Ministry of Health, Brazil.

Newton Barros Works in the Palliative Care Service, Hospital Nossa Senhora da Conceição, Grupo Hospitalar Conceição, Brazil.

Altamiro da Costa Pereira is Director of CINTESIS, Center for Health Technology and Services Research, Portugal, and member of the Faculty of Medicine, University of Porto, Portugal.

Marcelo Eduardo Zanella Capra works in the Oncology Service, Hospital Nossa Senhora da Conceição, Grupo Hospitalar Conceição, Brazil.

Airton Stein is member of the Community Health Service and Teaching and Research Management. Hospital Nossa Senhora da Conceição, Grupo Hospitalar Conceição, Brazil.

Alberto Freitas is member of CIDES, Department of Health Information and Decision Sciences, Faculty of Medicine, University of Porto, Portugal; and CINTESIS, Center for Health Technology and Services Research, Portugal.