

# What is the Current Scenario for Heart Failure in Brazil?

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Brazil - at this point in time with a population of 169,799,170, 50.77% females, mostly concentrated in urban areas (81.24%) - reported life expectancy increase at birth: from 64 years in 1985 up to 69 years in 2000<sup>1</sup>.

The Ministry of Health (MS) holds the responsibility of over 75% of hospital admissions in the country, through its Unified Health System (SUS). SUS is the only data base for diseases characteristics in the country. The remaining 25% is assisted by health plans, which do not make records available to the general public.

In the year 2002, 11,714,184 hospital admissions were done by SUS/MS. The top ten causes as identified by the International Classification of Diseases were: (ICD-10) for those admissions were: 1) Pregnancy, Delivery, and Puerperium 2,731,766; 2) Respiratory Apparatus Diseases - 1,820,634; 3) Cardiovascular Apparatus Diseases - 1,216,771; 4) Infectious and Parasitic Diseases - 1,042,136; 5) Digestive Apparatus Diseases - 986,406; 6) Genitourinary Apparatus Disease - 770,352; 7) Injuries from External Causes - 688,687; 8) Neoplasias - 527,747; 9) Endocrinologic, Nutritional, and Metabolic Diseases - 322,093; and 10) Mental and Behavioral Disorders - 308,264<sup>2</sup>.

While analyzing the clinical causes that have accounted for a higher number of hospital admissions in 2002 under SUS/MS, heart failure (HF) was ranked third (372,604), after pneumonia (794,260) and asthma (376,447)<sup>2</sup>.

In the last ten years HF has been reporting changing figures for hospital admissions, ranging from 372,604 to 524,155, which stands for a 3.18% to 3.71% rate range for all admissions in the country. Death rate ranged between 5.41% and 6.97% in the same period. As for hospital admissions, 2002 reported the lowest number in the last 10-year period<sup>2</sup> (table I).

Data on 2002 hospital admissions due to HF show that 186,810 (50.13%) were females. Patients under 20 years of age totaled 5,720 (1.53%), predominantly males (2,872). The 20-59-year-old range (110,900-29.76%) also reported males as predominant (57,700)

while the elderly ( $\geq 60$  years old) totaled 255,983 (68.70%), with predominance of females (130,832)<sup>2</sup>.

Figure 1 shows the increase in the number of hospital admissions and deaths resulting from HF, as well as death resulting from HF as age advances towards the 70-79-year-old range. It should be pointed out that as of 70 years of age, women - with longer life expectancy - report higher number of hospital admissions and deaths<sup>2</sup>.

The highest number of hospital admissions was shown to be in Southeastern Brazil (the most densely populated area), totaling 147,475 (39.58%), followed by the Northeast (94,966 - 25.49%), the South (78,580 - 21.09%), Central-West (35,330 - 9.48%) and North (16,253 - 4.36%). Except for the age range up to 20 years of age - where the Northeastern Region reported the highest number of hospital admissions (2,104 out of 5.720 - 37.41%), the Southeastern states reported the highest number for all other age ranges<sup>2</sup>. The same was true for the number of deaths: 12,868 (49.52%) in the Southeastern Region; 5,597 (21.54%) in the Northeast; 4,835 (18.61%) in the South; 1,791 (6.89%), in the Central-West; and 893 (3.44%) in the Northern Region.

**Table I - Number and percentage of hospital admissions and deaths due to Heart Failure under the assistance of SUS-MS in Brazil.**  
Time period: 1992-2002

Year	Nº of hospital admissions	(%)	Nº of deaths	(%)
1992	478,489	3.28%	25,887	5.41%
1993	516,701	3.48%	28,394	5.46%
1994	524,155	3.56%	28,540	5.44%
1995	450,650	3.56%	27,054	6.00%
1996	424,782	3.55%	27,402	6.45%
1997	422,616	3.58%	27,035	6.39%
1998	388,892	3.71%	26,298	6.76%
1999	416,242	3.34%	27,544	6.61%
2000	398,489	3.33%	26,368	6.62%
2001	385,758	3.28%	25,511	6.61%
2002	372,604	3.18%	25,984	6.97%

Nº = number; % = percentual.

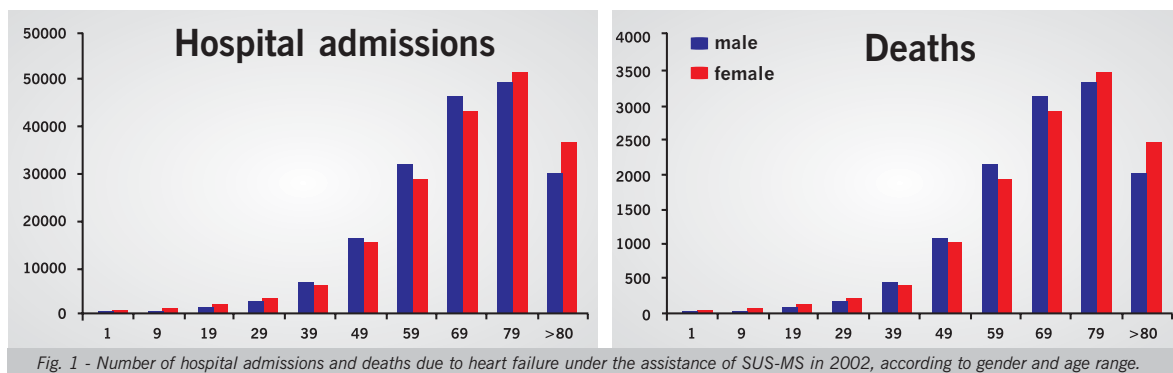


Fig. 1 - Number of hospital admissions and deaths due to heart failure under the assistance of SUS-MS in 2002, according to gender and age range.

The same was true for the correlation between death rate and age range, with the Northeastern Region accounting for the highest number (191 out of 479 - 39.87%) for the age range under 20. The Southeastern Region reported highest numbers for all other age ranges - (2,850 out of 5,886 - 48.42% for the 20-59 years of age range, and 9,860 out of 19,619 - 50.26% in the ≥60 years of age range)<sup>2</sup>.

The states to report highest number of hospital admissions were Minas Gerais (57,844), São Paulo (53,754), and Bahia (36,216). Those to report the lowest numbers were Roraima (151), Amapá (335), and Acre (551). The states to report highest numbers of deaths were São Paulo (5,969), Minas Gerais (3,689) and Rio de Janeiro (2,822). Highest mortality rates were reported in the states of Acre (12.89), São Paulo (11.10) and Capital District (10.86). Lowest mortality rates were reported in Piauí (2.58), Tocantins (3.49), and Mato Grosso (3.87)<sup>2</sup>.

Mortality rate is higher among patients under 1 year of age (14.4), reaching average rate in the 20-59-year-old range (5.31), to later on increase to 6.17 in the 60-69-year-old range; and then to 7.43 for the 70-79-year-old range, and 10.02 for patients over 80 years old.

Total cost to support the 11,714,184 hospital admissions by SUS along 2002 was R\$ 5.401.359.717,36, out of which R\$ 1.012.457.705,60 were taken by the 1,216,771 hospital admissions due to cardiovascular diseases (CVD). That amounts to 10.38% of all hospital admissions. Heart Failure accounted for R\$ 198.836.488,73 to cover 372,604

hospital admissions, which corresponds to 3.68% of all admissions and 19.64% of those resulting from cardiovascular diseases. Table II illustrates total expenditure, plus specifications, per region<sup>2</sup>.

Cardiovascular diseases, accounting for a total of R\$ 1.012.457.705,60, were the ones to require highest fundings to cover 1,216,771 hospital admissions, followed by R\$ 692.648.380,57 due to pregnancy, delivery and puerperium, totaling 2,731,766 admissions. Respiratory apparatus diseases are ranked third, totaling R\$ 655.217.483,80 for the expenses of 1,820,634 hospital admissions<sup>2</sup>.

From all hospital admissions in 2002, 335,110 (2.86%) deaths were reported, being 85,620 (25.54%) due to CVD and 25,984 (7.75%) to HF<sup>2</sup>.

Therefore, epidemiologic data on the syndrome in this country are similar to those found in developed countries. The only difference is related to financial investments, since Brazil counts on quite lower sums as compared to large centers worldwide. The total number of hospital admissions has been decreasing. However, the number of deaths has been kept stable, probably due to the fact that hospital admissions are associated to patients in more severe condition, and with myocardial function more severely affected. Such condition reports higher impairment of the elderly, to be turned into the number one cause for hospital admissions for patients over 60 years old, accounting for 255,983 hospital admissions, followed by bronchitis/emphyzema (168,598), and pneumonia (129,194)<sup>2</sup>.

Table II - SUS-MS expenditure in Brazil in 2002. Total number of hospital admissions due to cardiovascular diseases (CVD) and heart failure (HF), per region, in reais (R\$)

Region	No. of hospital admissions (%)	Total Cost	Cost for CVD	Cost for HF
North	911,232	282,439,044.81	25,239,399.89	8,100,184.12
Northeast	35,133,825	1,298,561,855.69	167,439,485.13	46,804,232.55
Southeast	4,408,379	2,411,701,635.22	506,498,835.46	81,507,869.60
South	1,935,684	1,017,900,039.40	236,706,254.47	43,457,569.17
Central-West	945,064	390,757,142.24	765,733,730.65	18,966,633.29
Total	11,714,184	5,401,359,717.36	1,012,457,705.60	198,836,488.73

Nº = number; CVD = cardiovascular disease; HF = heart failure.

## REFERENCES

1. www.lbge.gov.br
2. www.datasus.gov.br