Editorial

Cardiovascular Statistics – Brazil: Coming of Age

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Understanding how cardiovascular health is changing in Brazil requires more than just access to data. While the Brazilian Ministry of Health's Department of Information and Informatics of the Brazilian Unified Health System (DATASUS), the Global Burden of Disease (GBD) study, population-based studies, and hospital registries provide a wealth of information, their findings are not always easy to reconcile. These sources cover different populations and periods and use different definitions and methods. Even seemingly straightforward questions, such as whether cardiovascular mortality is increasing or decreasing, can yield different answers depending on the source and whether crude or age-standardized rates are considered. Even as age-standardized mortality declines, the number of deaths may increase as the population grows and ages. For clinicians, researchers, and health planners, the abundance of cardiovascular data can be overwhelming. Brazil needed a regularly updated synthesis that would bring these sources together, explain their differences, and clarify what the numbers reveal about the country's changing cardiovascular health.

Cardiovascular Statistics – Brazil is a collaborative initiative that reviews and interprets the burden of cardiovascular diseases (CVDs) and their risk factors in Brazil. The initiative highlights trends over time and differences by age group, sex, and region. The idea for the project emerged during discussions at the Brazilian Congress of Cardiology in Brasília in 2018. Later that year, at the American Heart Association (AHA) Scientific Sessions 2018 in Chicago, Professor Emelia Benjamin generously shared the manual used to prepare the AHA's statistical report.[1] This exchange helped shape the Brazilian initiative, which brought together researchers from across the country who volunteered to work in pairs on each topic. The project was developed in collaboration with the GBD study, the GBD Brazil network, and colleagues from the World Heart Federation, with support from the Brazilian Society of Cardiology (SBC) and the Arquivos Brasileiros de Cardiologia (ABC Cardiol). The first edition, Cardiovascular Statistics – Brazil 2020,[2] was published in September 2020 and included six chapters addressing overall CVD and selected clinical conditions. Each chapter followed a common structure, covering prevalence, incidence, mortality, disease burden, health care use and costs, and priorities for future research. This edition also established the report's writing style: concise, data-focused statements organized by topic, with clearly identified sources and explicit discussion of differences between estimates. A companion methodological article demonstrated why these distinctions matter: apparent increases in cardiovascular mortality in northern and northeastern Brazil could reflect improvements in death registration and cause-of-death reporting, illustrating how uncorrected mortality data can lead to misleading conclusions.[3]

Across successive editions, Cardiovascular Statistics – Brazil expanded from six chapters in 2020 to 15 in 2026. The 2021 edition added major cardiovascular risk factors, whereas the 2023 edition introduced physical activity and examined the effects of the COVID-19 pandemic on cardiovascular health and care.[4,5] The 2026 edition adds nutrition, congenital heart disease, and chronic kidney disease (CKD),[6] bringing new authors and expertise from other specialties into the project, with increasing support from the SBC. The coordinating committee also expanded to support chapter review and standardization. The report's sources have evolved as well, incorporating successive GBD releases, updated national surveys and administrative data, and new findings from Brazilian studies. The pandemic underscored both the importance and the limitations of this work: disruptions in care altered the patterns being measured, while delays in data availability affected the publication schedule. Alongside this expansion, the Portuguese- and English-language

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versions of the reports have received hundreds of citations in Google Scholar and have become some of the most cited articles published in ABC Cardiol.

The value of Cardiovascular Statistics – Brazil lies in its ability to inform clinical practice, research, and health policy. For a physician assessing a patient, the likelihood of a diagnosis depends not only on symptoms, signs, and test results but also on disease prevalence among people of similar age and background. Understanding how disease patterns change over time helps clinicians interpret their observations in practice. For researchers, the report provides a reference for framing research questions, selecting data sources and outcome definitions, and interpreting findings in light of differences between populations and methods. For health care managers and policymakers, it brings together information on disease burden, inequalities, service use, and costs to support planning and resource allocation. For example, a Brazilian Ministry of Health assessment of left ventricular assist devices used the report's heart failure data to describe the disease burden and estimate the population potentially eligible for treatment.[7] By identifying gaps in data coverage, inconsistencies between sources, and conditions for which evidence remains scarce, the initiative can also guide improvements in cardiovascular data collection. These applications also clarify its scope and limitations. The report informs clinical reasoning but does not provide diagnostic algorithms or treatment recommendations. Although it draws on systematic literature searches, it is not a systematic review addressing a single research question. Nor does it merely reproduce GBD estimates or DATASUS tabulations. Its contribution is to integrate these sources into a coherent account of cardiovascular health in Brazil while making their differences and limitations explicit. Table 1 summarizes the uses and limitations of Cardiovascular Statistics – Brazil.

In this issue of ABC Cardiol, we are pleased to present Cardiovascular Statistics – Brazil 2026.[6] The report documents substantial progress alongside persistent gaps in prevention and care. According to GBD 2023 estimates, age-standardized cardiovascular mortality declined by 54.8% between 1990 and 2023, yet the number of people living with CVD increased by 50%, reaching 16.4 million.[6,8] These gains were uneven across the country, and substantial geographic inequalities persist. Increasing obesity prevalence, inadequate control of systemic hypertension and diabetes, and gaps in lipid management and stroke rehabilitation underscore the need for further action. These findings should also be considered within the broader Latin American context, where marked increases in cardiometabolic risk factors, particularly obesity and diabetes, have been reported.[9] By adding CKD to its existing coverage of obesity, diabetes, and cardiovascular conditions, the report provides a broader basis for examining cardiovascular-kidney-metabolic health within the AHA framework, which recognizes the interconnected nature of these conditions and the need for coordinated prevention and care.[10] This edition also introduces a standardized approach to reporting economic estimates: costs are adjusted to December 2025 prices using country-specific inflation indices and then converted to U.S. dollars using exchange rates for that month, providing a consistent basis for presenting monetary values. A new data hub from the SBC (www.hubaddress.cardiol.br) will also enable researchers and health care managers to retrieve numerical data from the Brazilian Mortality Information System and the GBD study through a simple, intuitive interface, selecting the condition and period of interest from the available datasets. Table 2 presents selected key findings from the 2026 report.

Cardiovascular Statistics – Brazil has come of age. It has become a key reference for cardiovascular health data in Brazil, expanded in scope and participation, and established a network

Table 1 – Uses and limitations of Cardiovascular Statistics – Brazil

Audience	Questions the report can help address	Limitations
Clinicians and other health professionals	How common is a condition in a given population? How are disease patterns and outcomes changing?	Population-level estimates provide context for individual patient assessment but do not replace clinical judgment, diagnostic algorithms, or treatment guidelines.
Researchers and epidemiologists	Which data sources and definitions are appropriate for a research question? How do findings compare with other evidence from Brazil? Where are the evidence gaps?	Users must still examine the original sources and their methods and assess whether the data are suitable for the proposed study.
Health care managers and policymakers	Where is the disease burden greatest? How are health care utilization and expenditures changing? Which populations experience gaps in care?	Descriptive evidence informs planning and health technology assessment but does not, by itself, establish the effectiveness or cost-effectiveness of an intervention.
Patients, journalists, and the public	What are the main cardiovascular health problems in Brazil? How do they vary across states, by sex, and over time?	Although the report describes differences by state and sex, more detailed estimates for municipalities, neighborhoods, or specific population subgroups may be unavailable.

Source: Prepared by the authors.

Table 2 – Cardiovascular health in Brazil: Selected key findings from the 2026 report

Indicator	Key finding	Data source and reference year
CVD	An estimated 16.4 million people were living with CVD.	GBD 2023
CHD	IHD accounted for 158,100 deaths, representing 41.6% of cardiovascular deaths.	GBD 2023
Coronary revascularization	The number of PCI procedures increased from 46,283 in 2008 to 123,320 in 2024, whereas the number of CABG procedures increased from 20,515 to 22,219. The proportion of revascularization procedures performed surgically declined from 30.7% to 15.3%.	SUS administrative data, 2008-2024
Stroke	An estimated 2.69 million people were living with stroke.	GBD 2023
Chagas disease	An estimated 4.0 million people were living with Chagas disease.	GBD 2023/RAISE Study
VHD	An estimated 1.43 million people had rheumatic VHD, and 492,000 had nonrheumatic VHD. Between 1990 and 2023, age-standardized prevalence remained nearly unchanged for rheumatic VHD (1.5%) but increased by 23.0% for nonrheumatic VHD.	GBD 2023; trends for 1990-2023
Systemic hypertension	Among adults in Brazilian state capitals, 29.7% reported a medical diagnosis of systemic hypertension.	Vigitel, 2024
High LDL-C	An estimated 67,688 cardiovascular deaths were attributable to high LDL-C.	GBD 2023
Obesity	Obesity affected 25.7% of adults in Brazilian state capitals.	Vigitel, 2024
Diabetes	An estimated 16.6 million adults aged 20-79 years had diabetes; 31.9% were unaware of their condition.	IDF Diabetes Atlas 2025; estimates for 2024
Smoking	Smoking prevalence among adults in Brazilian state capitals was 11.5%.	Vigitel, 2024
Electronic cigarette use	Among Brazilians aged ≥ 14 years, 8.8% had ever used electronic nicotine delivery systems, and 5.6% reported use in the previous year; the latter proportion corresponded to approximately 9 million people.	LENAD III, 2023
Hospital expenditure on HF	SUS reimbursements for HF hospitalizations totaled R$ 583.8 million, with a mean reimbursement of R$ 2,532 per admission.	SUS administrative data, 2024; December 2025 prices

Indicators reflect different populations and methods. Vigitel covers adults in Brazilian state capitals and the Distrito Federal; systemic hypertension is based on self-reported medical diagnosis. PCI counts combine the report's coronary angioplasty and primary angioplasty categories. The proportion of revascularization procedures performed surgically was calculated as CABG/(CABG + PCI). Hospital payments represent reimbursements rather than the full cost of care. The mean reimbursement for HF was calculated using the payments and admission counts reported for the HF category in Tables 1.5 and 1.3, respectively. CABG: coronary artery bypass grafting; CHD: coronary heart disease; CVD: cardiovascular disease; GBD: Global Burden of Disease; HF: heart failure; IDF: International Diabetes Federation; IHD: ischemic heart disease; LDL-C: low-density lipoprotein cholesterol; LENAD III: Third Brazilian National Alcohol and Drugs Survey; PCI: percutaneous coronary intervention; RAISE: buRden of ChAgas dISEase in the contemporary world; SUS: Brazilian Unified Health System; VHD: valvular heart disease; Vigitel: Telephone Survey for Surveillance of Risk and Protective Factors for Chronic Diseases. Source: Cardiovascular Statistics – Brazil 2026 (in press).[6]

spanning disciplines and regions. The 2026 edition brings together [35] authors from different professional backgrounds and regions of Brazil, including early-career researchers working alongside experienced cardiologists, nephrologists, endocrinologists, and epidemiologists, with input from an international advisory committee. This network is itself an important contribution: it creates opportunities for mutual learning, methodological exchange, and sustained collaboration across successive editions. Through this work, the SBC has assumed a role of international significance as one of the pioneering national societies to regularly document cardiovascular health in its country, extending its contribution beyond professional advocacy and clinical practice guidelines. The Brazilian experience may serve as a model for other countries seeking to integrate diverse data sources and translate cardiovascular evidence into action.

Maturity also brings responsibilities. The next step is to secure the initiative's long-term institutional role within the SBC, with the support needed to sustain and renew its work while preserving the scientific autonomy and collaborative spirit that have guided it from the outset. Regular updates will be essential to track changes over time and maintain the report's relevance. Future editions should examine the

cardiovascular effects of climate change, including extreme heat and weather events that disrupt care.[11] They should also deepen the analysis of social determinants of health, examining how income, education, living conditions, and racial inequalities influence cardiovascular risk, access to care, and outcomes.[12] Quality of care and value in health care also warrant greater attention. The limited evidence available underscores the need to assess how consistently effective care is delivered, which outcomes matter to patients, and how resources can be used to achieve better results. Engaging new generations of researchers and additional disciplines will be essential to this renewal. The initiative's continued relevance will depend on its ability to help the SBC and health care managers identify and evaluate responses to problems that extend beyond the scope of individual patient care.

The ultimate challenge is to turn data into action. Cardiovascular Statistics – Brazil should inform policies and concrete measures to reduce inequalities, promote cardiovascular health, and improve the quality of care and access to treatment, particularly for people facing greater vulnerability and resource constraints. This is a central responsibility of a scientific society: to use its knowledge and collective voice to drive change. Now that the initiative has come of age, the challenge is to ensure that a clearer understanding of cardiovascular health in Brazil translates into better care and better health for its population.

Use of artificial intelligence

The lead author developed the ideas, arguments, and initial draft of this editorial. ChatGPT and Codex (OpenAI; GPT-6 for the current revision) were used to assist with English-language editing, copyediting, reference retrieval, and verification of reported numerical values against source documents. All authors reviewed and revised the artificial intelligence-assisted text and take full responsibility for the scientific content and the final manuscript.

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