Datasus: An Essential Tool for Public Health in Brazil

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Short Editorial related to the article: The Frequency of Cardiovascular Diseases in Rheumatoid Arthritis in Brazil: 10-year Cohort Study with DATASUS Databases

Since its creation in 1991, the Information Technology Department of the Unified Health System (DATASUS) has implemented information systems and IT support necessary for the planning, operation, and control of institutions linked to the SUS. Furthermore, DATASUS provides information that can assist in analyzing the health situation, making evidence-based decisions and developing health programs.[1]

Measuring the population's health status began with recording mortality and survival data evolving epidemiological and morbidity information. Currently, data on morbidity, disability, access to services, quality of care, living conditions, and environmental factors are used to create Health Indicators essential for quantifying and evaluating health information.[1]

Faced with a huge country like Brazil and with different regional challenges, the computerization of health systems was gradual and represented a gain for the process of health decentralization and epidemiological disease assessment. Currently, DATASUS includes data on mortality, hospitalizations, morbidities, population health care, records from hospital and outpatient networks, health establishments, financial resources, and demographic and socioeconomic data.[1]

After more than two decades of DATASUS's existence, we found many scientific articles that explored information from the DATASUS database. A search on the Pubmed website using DataSUS as a keyword showed just over 450 related articles published between 1998 and 2024.[2] An evolution can be observed in data evaluation and article preparation strategies.

Initially, many articles described epidemiological profiles of diseases based on the Mortality Information System (SIM)[3-6] or the Hospital Admission System (SIH).[7,8] Over time, studies emerged showing temporal trends over one or two decades and statistical projections, bringing a greater understanding of the dynamics of a given disease and its possible outcomes,[7,9,10] as well as studies of morbidity and the risk factors involved.

Currently, machine learning and artificial intelligence have brought more resources and elegance to the findings in the database made available by DataSUS as a cohort study published in this edition.[11]

In this study,[11] the authors explored data related to patients with rheumatoid arthritis in a retrospective cohort study, evaluating the types of disease-modifying antirheumatic drugs and the occurrence of cardiovascular diseases and factors associated with cardiovascular outcomes.[11]

Access to a national database with a large contingent of patients is a differentiator, in addition to evaluating how regional aspects can affect the patient's outcome. However, I reinforce the importance of training information system operators in different spheres to correctly fill out documentation or type it, with criteria and ethics in preparing documents and transcription. The accuracy of information brings more quality and a valuable opportunity for analysis strategies.[12] Studies of associations, projections, or emergence of health emergencies are already underway in other countries, such as Canada, which has computerized the health system and uses the available database for estimations.[13]

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References

1. Brasil. Ministério da Saúde. DATASUS [Internet]. Brasília: Ministério da Saúde; 2025 [cited 2025 Feb 12]. Available from: https://datasus.saude.gov.br/sobre-o-datasus/.

2. The United States National Library of Medicine. PubMed. Bethesda: NLM; 2025 [cited 2025 Feb 12]. Available fom: https://pubmed.ncbi.nlm.nih.gov/?term=DATASUS&filter=years.1998-2024.

3. Oliveira GM, Klein CH, Silva NAS, Godoy PH, Fonseca TM. Ischemic Heart Disease Lethalities in the State of Rio de Janeiro between 1999 and 2003. Arq Bras Cardiol. 2006;86(2):131-7. doi: 10.1590/s0066-782x2006000200009.

4. Oliveira GM, Silva NA, Klein CH. Balanced Cardiovascular Disease Mortality from 1980 to 1999--Brazil. Arq Bras Cardiol. 2005;85(5):305-13. doi: 10.1590/s0066-782x2005001800002.

5. Mansur AP, Favarato D, Souza MF, Avakian SD, Aldrighi JM, César LA, et al. Trends in Death from Circulatory Diseases in Brazil between 1979 and 1996. Arq Bras Cardiol. 2001;76(6):497-510. doi: 10.1590/s0066-782x2001000600007.

6. Santana GBA, Leal TC, Paiva JPS, Silva LFD, Santos LG, Oliveira TF, et al. Temporal Trend of Mortality Due to Ischemic Heart Diseases in Northeastern Brazil (1996-2016): An Analysis According to Gender and Age Group. Arq Bras Cardiol. 2021;117(1):51-60. doi: 10.36660/abc.20200222.

7. Rosa ML, Giro C, Alves TO, Moura EC, Lacerda LS, Sant'Anna LP, et al. Analysis of Mortality and Hospitalization for Cardiovascular Diseases in Niterói, between 1998 and 2007. Arq Bras Cardiol. 2011;96(6):477-83. doi: 10.1590/s0066-782x2011005000053.

8. Nascimento BR, Brant LC, Lana ML, Lopes EL, Ribeiro ALP. Trends in Procedure Type, Morbidity and in-Hospital Outcomes of Patients with Peripheral Artery Disease: Data from the Brazilian Public Health System. Ann Vasc Surg. 2016;31:143-51. doi: 10.1016/j.avsg.2015.08.019.

9. Soares GP, Klein CH, Silva NA, Oliveira GM. Evolution of Cardiovascular Diseases Mortality in the Counties of the State of Rio de Janeiro from 1979 to 2010. Arq Bras Cardiol. 2015;104(5):356-65. doi: 10.5935/abc.20150019.

10. Khalil KH, Sá MPBO, Vervoort D, Roever L, Pires MAA, Lima JMO, et al. Coronary Artery Bypass Graft Surgery in Brazil from 2008 to 2017. J Card Surg. 2021;36(3):913-20. doi: 10.1111/jocs.15328.

11. Gamarski R, Castro FF, Nascimento JAS, Abreu MM. A Frequência de Doenças Cardiovasculares na Artrite Reumatoide no Brasil: Estudo de Coorte de 10 Anos com Bancos de Dados do DATASUS. Arq Bras Cardiol. 2025; 122(2):e20240313. DOI: https://doi.org/10.36660/abc.20240313.

12. Lima CR, Schramm JM, Coeli CM, Silva ME. Review of Data Quality Dimensions and Applied Methods in the Evaluation of Health Information Systems. Cad Saude Publica. 2009;25(10):2095-109. doi: 10.1590/s0102-311x2009001000002.

13. Mahmud SM, Bozat-Emre S, Mostaço-Guidolin LC, Marrie RA. Registry Cohort Study to Determine Risk for Multiple Sclerosis after Vaccination for Pandemic Influenza A(H1N1) with Arepanrix, Manitoba, Canada. Emerg Infect Dis. 2018;24(7):1267-74. doi: 10.3201/eid2407.161783.