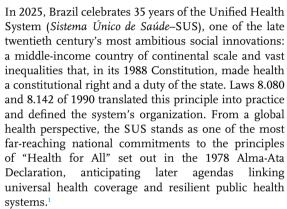
Thirty-five years of Brazil's Unified Health System (SUS): from Alma-ata to the climate challenge



Alexandre Padilha, ^a Adriano Massuda, ^{b,*} Florentino Leônidas, ^c and Andreza Davidian ^b

^aUninove, São Paulo, São Leopoldo Mandic College, Campinas, SP, Brazil ^bGetúlio Vargas Foundation School of Business Administration of Sao Paulo, Sao Paulo, SP, Brazil

^cBrazilian Institute of Education Development and Research, Brasília, DF, Brazil



Building the SUS was not merely a technical endeavour but a profoundly political one. Emerging from the Sanitary Reform movement amid Brazil's struggle for redemocratisation, it became the most transformative public policy for reducing inequality in the new democracy. Applying Donabedian's framework, the scale of change is striking.2 Structurally, Brazil moved from fragmented and insufficient service provision to a nationwide network encompassing primary care, emergency, and mental health services, as well as specialised centres in transplantation, HIV/ AIDS, and oncology, all supported by a comprehensive pharmaceutical policy.3 Regarding processes, the system advanced multiprofessional family health teams and community-based services, empowering local governance.4 Outcomes include sustained reductions in infant mortality (from 53.4 to 12.7 deaths per 1000 livebirths between 1990 and 2023), gains in life expectancy (from 65 years in 1985 to 76,8 years in 2025), the elimination of polio (1989) and measles (2000), and expanded access to medicines and vaccines.

Over time, the SUS has become a major political and institutional achievement. Administrative power shifted from a centralised social-security bureaucracy to tripartite governance among municipalities, states, and the federal government. Technical power, once

*Corresponding author.

E-mail address: adriano.massuda@fgv.br (A. Massuda).

concentrated within that bureaucracy and in medical authority, broadened through multiprofessional practice, universities, and public health institutions. Political power expanded through participatory councils, social movements, and new collective identities-from HIV/AIDS activists to disability-rights and LGBTQIA+ groups—who found in the SUS a platform for citizenship. The SUS also catalysed Brazil's Health Economic-Industrial Complex (HEIC), fostering domestic production of vaccines, generics, and medical technologies, while consolidating institutions such as Fiocruz and Butantan as global leaders in science and public

Enduring challenges persist. Chronic underfunding, exacerbated by the 2016 spending cap (Constitutional Amendment No. 95), constrains expansion and quality of care.6 Regional inequalities are pronounced, with specialised services, intensive care beds, and diagnostic equipment concentrated in wealthier regions and within the private sector.7 Waiting lists for surgeries, biopsies, and radiotherapy are long and steadily growing, while the oncology network, despite expansions, still lags behind the country's rising cancer burden.^{8,9} Maternal mortality remains unacceptably high for a nation at Brazil's level of development, and the health workforce is unevenly distributed, as strategies to attract, retain, and train professionals across regions are still insufficient.10,11

Looking ahead, the twenty-first century brings new pressures. The climate emergency is already affecting the health of Brazilians: vector-borne diseases are spreading to new areas, floods and heatwaves are triggering disasters, and degradation of the Amazon threatens Indigenous peoples while increasing the risk of zoonotic spillovers. Rapid population ageing has major implications for chronic disease, long-term care, and financing. Advances in digital health, artificial intelligence, and high-cost therapies demand regulatory, ethical, and fiscal adaptation. The spread of disinformation—blatantly exposed during the COVID-19 pandemic and Brazil's former far-right federal government—poses cultural and political challenges to health system resilience.12

These are the new frontiers of the SUS, and we propose four strategic movements to drive its renewal. First, to reposition health as a central pillar of development, linking equity, technological innovation, and

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environmental sustainability. This includes reinforcing the HEIC as a source of sovereignty, decent work, innovation capacity, and global competitiveness. Second, to redesign institutions to strengthen primary care as the "life centre" of territories, reduce inequalities in specialised care, and establish new legal and organisational frameworks for climate resilience and pandemic preparedness. Third, to steer technological transformation through digital health and innovative care models to meet the needs of Indigenous peoples, persons with disabilities, older adults, and other vulnerable groups. Fourth, to confront denialism, by rebuilding trust in vaccines, countering misinformation, and reaffirming the intrinsic bond between health and democracy.

The coincidence of the SUS's 35th anniversary with COP-30 in Belem offers both symbolic and strategic opportunity. As the Amazon hosts the world, Brazil can show that resilient universal health systems are indispensable to climate adaptation—by generating timely intelligence on the links between climate change and population health, enabling early detection of climatesensitive diseases, protecting vulnerable populations, and ensuring continuity of care during disasters. The health co-benefits of ambitious climate action, including cleaner air, healthier diets and safer water, are scientifically sound, politically persuasive and socially mobilising. By placing health at the centre of COP-30, Brazil can inspire its citizens and help catalyse global momentum.

With celebration comes responsibility. Restoring health priorities has become a central commitment of the current administration. Within this agenda, ADAPTA-SUS is a national initiative designed to strengthen the health system's preparedness for climate impacts.14 Beyond national borders, and together with partners in the Baku Group-Azerbaijan, Egypt, the United Arab Emirates, and the United Kingdom-Brazil is advancing a global framework for climatehealth adaptation. Opened for consultation during the 2025 World Health Assembly and co-developed with WHO Member States, academia, and civil society, the Belem Health Action Plan defines three shared priorities: reinforcing surveillance of climate-related health threats; accelerating evidence-based policies through intersectoral cooperation; and fostering innovation and local production of technologies and solutions for vulnerable populations.15

The lesson of 35 years is clear: the SUS is more than a health system. It has built institutions that outlast governments, forged collective identities, and saved millions of lives. Now it must enter a new "One Health" cycle—more resilient, agile, and innovative, and better prepared for the uncertainties of a changing planet. The motto originally articulated by Dr. Sergio Arouca in 1986 that inspired Brazil's health reform remains as true and urgent as ever:

"health is democracy." To honour its 35 years at COP-30 is to reaffirm that the future of global health depends on the same courage that created the SUS—the political will to defend universality, embrace innovation, and confront the intertwined challenges of climate and health. There is no health without climate protection, and no democracy without the right to health.

Contributors

AP and AM conceptualised the study and wrote the original draft. FJAL and AD contributed to writing, editing, and reviewing the manuscript. All authors verified the information reported and approved the final version of the manuscript.

Declaration of interests

AP currently serves as the Brazilian Minister of Health; AM currently serves as the Executive Secretary for the Ministry of Health of Brazil. No payments or benefits were received in relation to this work, and the authors have no personal or financial interest related to this manuscript.

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