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HEALTH SYSTEM IN BRAZIL

Reforms, Transformations, and Challenges

SANDHYA VENKATESWARAN AND ALOK KUMAR SINGH

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List of Abbreviations

ANC	Ante Natal Care
ANS	National Supplementary Health Agency
ANVISA	National Health Surveillance Agency
CHC	Community Health Centre
CHE	Current Health Expenditure
CIB	Bipartite Inter-Management Committee
CIT	Tripartite Inter-Management Committee
CNS	National Health Council
CONASS	National Council of State Health Secretaries
COSEMS	State Council of Municipal Health Secretariats
DATASUS	Informatics Department of the Sistema Único de Saúde
FFS	Fee for Service
FHS	Family Health Strategy
FHT	Family Health Team
GBD	Global Burden of Disease
GHE	Government Health Expenditure
IBGE	Brazilian Institute of Geography and Statistics
IHME	Institute for Health Metrics and Evaluation
IMR	Infant Mortality Rate
INAMPS	National Institute of Medical Care and Social Security
INPS	Instituto Nacional de Previdincia Social
LMIC	Lower Middle Income Countries
MoH	Ministry of Health
NCD	Non-communicable Disease
NHS	National Health Service
NMR	Neonatal Mortality Rate
OECD	Organization for Economic Cooperation and Development
OOP	Out-of-Pocket
PAHO	Pan American Health Organization
P4P	Performance Related Pay
PHC	Primary Healthcare
PMAQ	National Programme for Improving Primary Care Access and Quality
RAS	Healthcare Networks
SUS	Sistema Único de Saúde
THE	Total Health Expenditure
UHC	Universal Health Coverage
U5MR	Under-Five Mortality Rate
UMIC	Upper-Middle-Income Countries
WHO	World Health Organization

1. Introduction

Brazil initiated health reforms in the 1990s, incorporating key elements of the Universal Declaration of Human Rights and Alma Ata and recognised health as a right of Brazilian citizens. A constitutional amendment established a unified health system, Sistema Único de Saúde (SUS), in 1988, making the delivery of healthcare the responsibility of the state in terms of financing, provisioning, and regulation. The rationale for the reforms was the widespread inequality in the distribution of health resources and health outcomes across regions. Brazil witnessed high economic growth during 1960–80 (Figure 1), but its benefits were disproportionately distributed among the upper-middle-income group. Brazil's healthcare system, before the start of the reforms, provided differential access to healthcare services based on employment status. Those in formal employment had access to social security through dedicated facilities that were expensive to access for the uninsured . However, the latter group comprised about 51 percent of the total population. This created a differential and fragmented system (Gragnolati, Lindelow, & Couttolenc, 2013). It is in this context that SUS sought to provide comprehensive care through a focus on decentralisation and by promoting equity across regions and income groups. Its implementation led to consistent progress in achieving universal health coverage (UHC).

This paper aims to analyse the SUS and draw lessons for health system strengthening with a view to promote equity in access to health services alongside financial protection. Based on the World Health Organization (WHO) framework for health systems, the analysis attempts to distil learnings from the achievements and challenges of Brazil's reforms targeting various aspects of its health systems, which could be instructive for comparable countries.

The paper is organised into three sections. The first discusses the underlying context for the structural reforms. The second outlines the system-level changes, their impact, and continuing challenges. Taking a subset of the WHO framework for health systems, the analysis focuses on four specific areas: organisation and governance of healthcare, healthcare financing, physical and human resources, and the provision of healthcare. The third section summarises the discussion and outlines possible implications of the reform experience for comparable countries.

2. Social, economic, demographic, and political context

Brazil became a republic in 1889 with a federal structure with autonomous states. The political and economic policy during 1889–1930 mainly represented the interests of the oligarchy, primarily large landowners, which led to frequent class conflicts in the 1920s. The economic crisis in 1929 led to the end of the oligarchy (Evans, 1968; Malloy, 1977). There was no policy focus on health during this period, though public health campaigns under the Directorate General of Public Health targeted specific diseases (Paim, et al., 2011).

The period between 1930 and 1964 witnessed the expansion of industries and the centralisation of administration, ending the autonomy of states. While the economy grew at a faster rate than in the 1920s , Brazil's political system went through a crisis post-1945 due to ideological conflicts between the state, landowners, and social classes (Horn, 1985).

During the period 1930–1945, President Vergas's administration centralised control of the social security fund[1]. This centralisation of control led to a rift between two segments of the government post-1945, with one group advocating for the decentralised control of funds. The president adopted populist measures in favour of the workers' union, which had an influence on the administration of

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[1] A tripartite costing scheme where employer, employee, and the state contribute their respective share to provide social security benefit to the targeted population (Oliveira & Beltrão, 2000).

the social security fund[2] (Malloy, 1977; Horn, 1985). The rift within the government led to a period of populism and political instability between 1945 and 1964, as various coalition governments attempted to retain control of the social security fund. The political instability finally led to a military coup in 1964 (Malloy, 1977; Paim, et al., 2011).

The military dictatorship started facing economic challenges in the late 1970s and early 1980s, due to high domestic inflation and high international interest rates, which caused a balance-of-payment crisis in 1982. Successive economic crises in the 1980s led to reduced tax collection, and, consequently, lower public spending on health, which aggravated the inequitable distribution of health resources (Almeida et al., 2000). Growing inequality increased the gap in access to healthcare (Figure 1, Table 1). The economic crisis brought the political legitimacy of the military dictatorship under question. The combination of political and economic instability led to widespread social movements in the mid-1980s seeking democratisation, economic liberalisation, and social reforms. Healthcare constituted a key component of the reforms agenda of these social movements (Paim et al., 2011).

The health reforms movement (Sanitarista movement) gained traction with the establishment of the Brazilian Health Studies Center and the Collective Health Postgraduate Association in the late 1970s. The participation of municipal and state health officers under the National Council of State Officers in 1980 strengthened the movement, with these processes eventually leading to the approval of health as a citizen's right (Paim et al., 2011).

Health policy began to receive attention after 1945. The Ministry of Health was created in 1953, and social security rights were expanded for urban workers and civil servants. Medical coverage was based on occupational categories, with unemployed, self-employed, and domestic workers being largely dependent on philanthropic care or out-of-pocket payments to private providers (Horn, 1985; Paim, et al., 2011).

The military dictatorship (1964–1985) focused on foreign investments in the private sector and aimed at high economic growth, under the assumption that the benefits will trickle down to all. However, growth did not benefit the poor due to a restrictive wage policy and a disproportionately low focus on social-sector spending. This increased inequality between the privileged employed workers and the unemployed population. The overemphasis on private investment led to the privatisation of medicine via the penetration by multinational pharmaceutical industries in more developed areas (Horn, 1985).

During this period, the government consolidated social security plans under the umbrella institution, Instituto Nacional de Previdincia Social (INPS), in 1967, integrating medical care, retirement programmes, and other social security benefits for the employed population, many of which had been prevalent since the 1930s and 1940s (Oliveira & Beltrão, 2000). The rationale for this integration was to depoliticise social security and pass greater control of the social security fund to the federal government.

Rural and domestic workers were assured social security benefits by the late 1970s. The National Institute of Medical Care and Social Security (INAMPS) was created under the Ministry of Social Security and Services in 1977. This introduced the divide between the purchasing and provisioning functions, with INAMPS being responsible for delivering curative services to the insured urban and rural population and INPS being responsible for payments (McGreevey, 1988; Oliveira & Beltrão, 2000).

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[2] The worker unions had access to the social security fund which they utilised to build their clientele groups. President started mobilizing the worker unions by adopting populist measures to strengthen his position (Malloy, 1977).

The increased demand for healthcare due to expanded social security benefits, coupled with low public expenditure on health, caused INAMPS to rely on the private sector. The literature suggests that most curative services were delivered through contracted private hospitals that comprised 58 percent of the total INAMPS expenditure in 1984. State-run healthcare facilities mainly delivered primary care and preventive services (McGreevey, 1988; Massuda et al., 2022).

The democratisation of the political structure in the 1980s created a conducive atmosphere for social and political organisations to demand a patient-centric healthcare system as opposed to a hospital-based system. Civil society organisations, academicians, and left-oriented bureaucrats played a key role in the prioritisation of comprehensive primary care within the health system (Paim et al., 2011; Machado & Silva, 2019).

Figure 1: Public expenditure on health and GDP growth trend in Brazil, 1965–2018
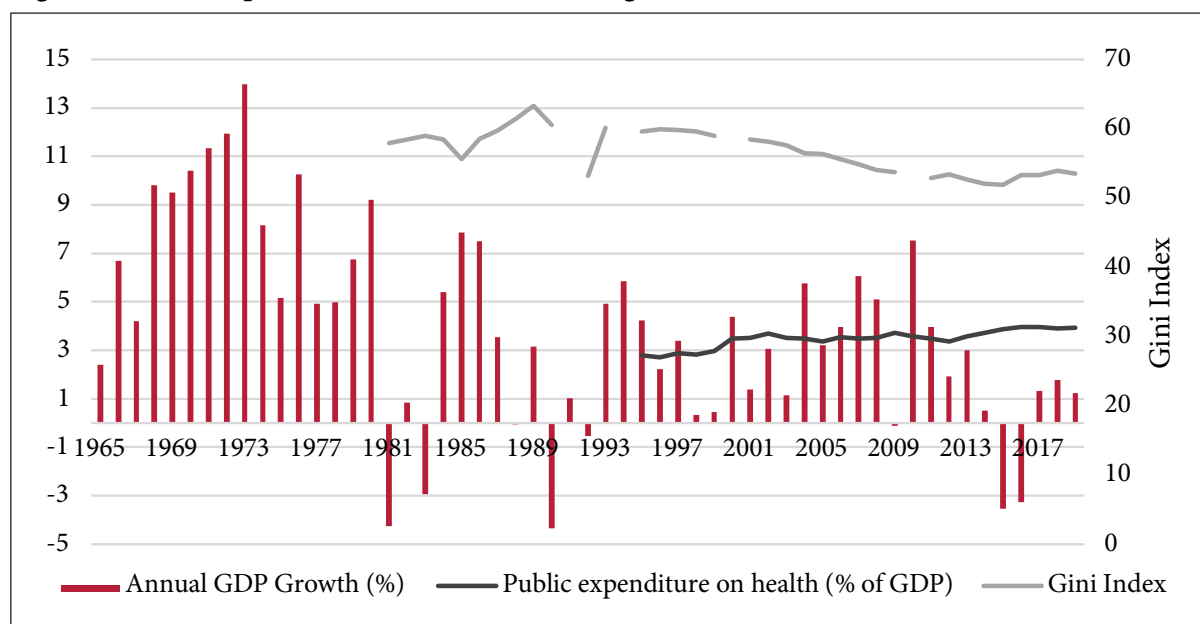
Source: World Bank (2022)

Table 1: Inpatient admission rate by geographical region, 1989

Region	Hospitalisation rate per 100 people, 1989
North (less developed)	9
Northeast (less developed)	8.6
Southeast (developed region)	12
Mid-west (developed region)	14
Brazil (average)	11.7

Source: Almeida et al. (2000)

2.1. Key issues pre-reform

The health system in Brazil was a centralised, fragmented, and hospital-centric system until 1990. Health policy decision-making was centralised, with states and municipalities having very limited policy-making power. The central government controlled 70 percent of the total health resources in 1980, which increased to 86 percent by 1990. The majority of low-cost illnesses (80 percent) were treated at hospitals rather than at state-run primary health centres (PHCs). The majority of human resources (80 percent) was concentrated in hospitals delivering curative care. Five ministries were involved in handling different aspects of health: social security (curative medicine), health (prevention and primary care), interior (water and sanitation), labour (occupational disease), and education (university hospitals). There was little stewardship across these, leading to duplication in roles and inefficiencies (Horn, 1985; Almeida et al., 2000; Elias & Cohn, 2003).

Despite the fragmentation in healthcare provisioning, there was a significant improvement in health outcomes at the national level from the 1960s (Table 2), although it is suggested that improvements in social determinants of health, such as piped water, electricity, and sanitation, played a significant role in the improvement of health outcomes (Paim et al., 2011). Despite overall improvements in health, access to and utilisation of health services across states remained variable, leading to variations in outcomes (Figure 2).

Table 2: Health Outcomes in Brazil, 1960–2000

Indicators	1960	1970	1980	1990	2000
Life expectancy at birth, total (years)	54	59	62.6	66.3	70
Mortality rate, infant (per 1,000 live births)	128	102	76.6	52.6	30.4
Mortality rate, neonatal (per 1,000 live births)	NA	47	35.2	25.4	18.5
Mortality rate, under-5 (per 1,000)	170	133	96.3	63.1	34.7
Fertility rate, total (births per woman)	6.1	5	4	2.9	2.3
Urban population (% of total population)	46	56	65	74	81

Source: World Bank (2022)

Figure 2: Death due to communicable, maternal, neonatal, and nutritional diseases across regions (% of total deaths)
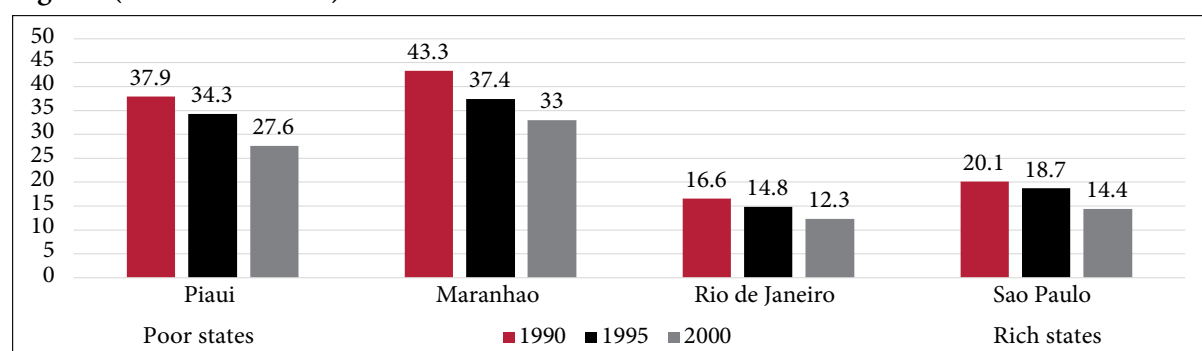
Source: IHME (2019)

It is important to note that Brazil did not have a scarcity of physicians per 1,000 people, but the distribution of physicians was inequitable. Most physicians were practising in the Rio-Sao Paulo belt (southern region) in the 1980s. Similarly, hospital beds were mainly located in the southern region (Table 3) (Buss & Gadelha, 1996; Horn, 1985).

Table 3: Region-wise distribution of health resources, 1994 and 1990, Brazil

Region	Physicians per 1,000 people, 1994	Hospital beds per 1,000 people, 1990
North	0.5	2.1
Northeast	0.7	2.8
Southeast	1.6	4.3
South	1.2	4.3
Mid-west	1.2	4.2
Brazil	1.2	3.7

Source: Almeida et al. (2000) and Buss & Gadelha (1996)

In the pre-reform period, there was a strong private network, which posed a significant challenge in materialising the core idea of the SUS post-1990. An estimated 68.4 percent of the total hospital beds were located in private hospitals in 1975, and 20 percent of the total population was covered by private health plans by 1987. This led to greater utilisation of the private sector (Figure 3). This was also reflected in the share of public health expenditure per capita, which was 43.1 percent, compared with 56.9 percent for private expenditure in 1990

(Paim et al., 2011; Elias & Cohn, 2003). This led to a low focus on primary care and population health in the late 1980s (Table 4).

Even though Brazil witnessed consistent improvements in health outcomes at the national level (Figures 4–8), outcomes and health resources were inequitably distributed across regions (Figures 2, 9, & 10). Public expenditure on health was not comparable to that of countries with similar economic contexts (Figure 11), out-of-pocket expenditure was higher than that of some comparable countries (Figure 12), and health resources (hospital beds and human resources) were lower than comparable upper-middle-income countries (UMICs) (Figure 13–15).

Table 4: Coverage of preventive services pre-reform, Brazil, 1990

Indicators	1990
Births attended by skilled health staff (% of total)	70 (1991)
Pregnant women receiving prenatal care (%)	74 (1986)
Immunisation DPT (% of children aged 12–23 months)	66
Immunisation Measles (% of children aged 12–23 months)	78

Source: World Bank (2022)

Figure 3: Healthcare utilisation by coverage in Brazil, 1981
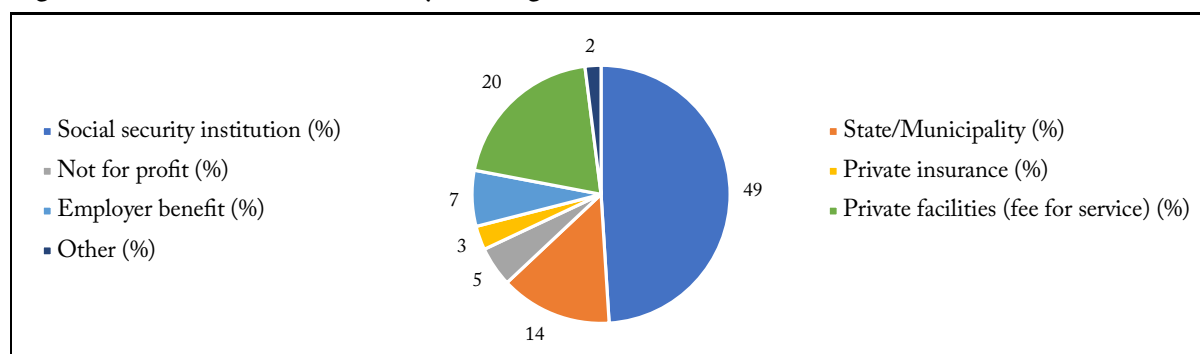
Source: Couttolenc and Dmytraczenko (2013)

Presented in Figures 4 to 15 are trends, over time, for these indicators, as well as for health outcomes across countries, arranged according to GDP per capita (constant 2015 US$) for the year 2000.

Figure 4: Life expectancy at birth, total (years)
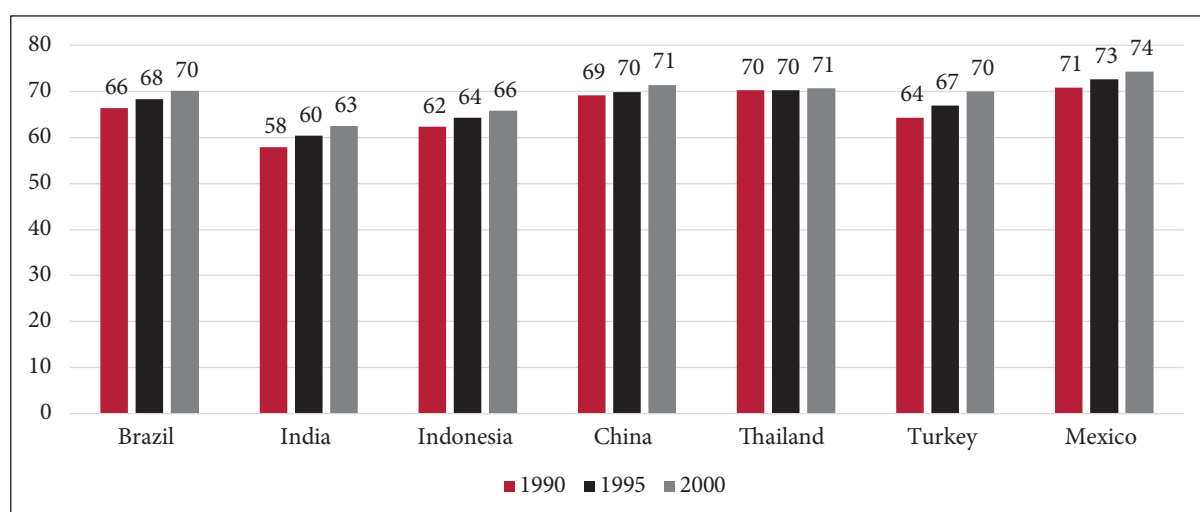
Source: World Bank (2022)

Figure 5: Neonatal mortality rate (per 1,000 live births)
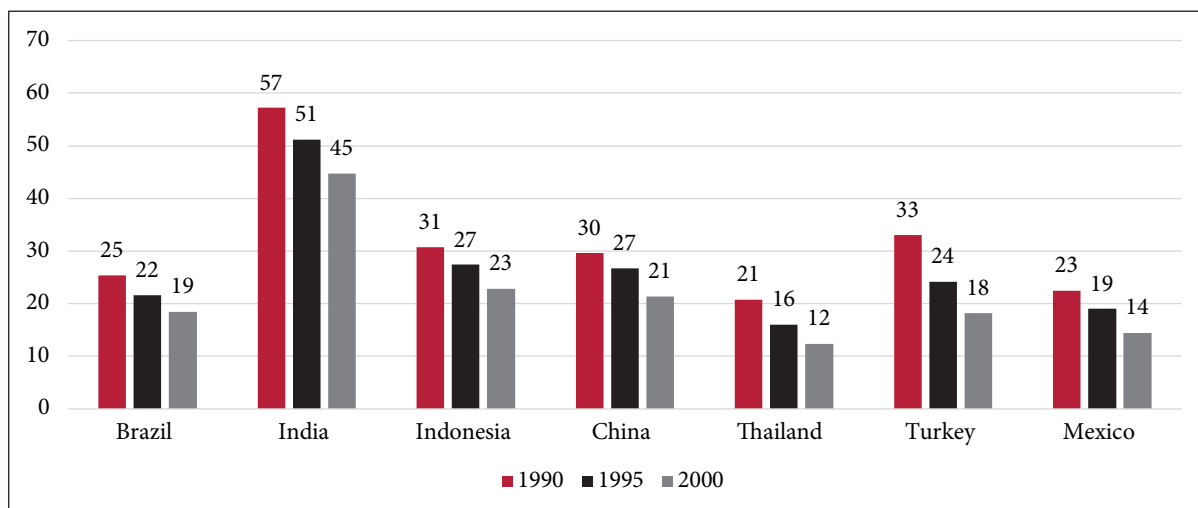
Source: World Bank (2022)

Figure 6: Infant mortality rate (per 1,000 live births)
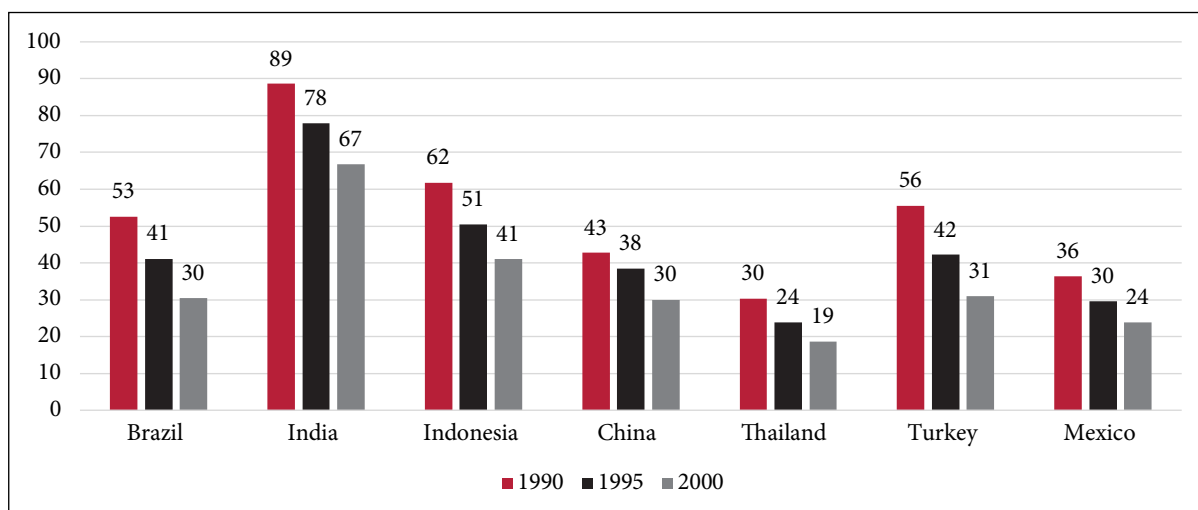
Source: World Bank (2022)

Figure 7: Under-five mortality rate (per 1,000 live births)
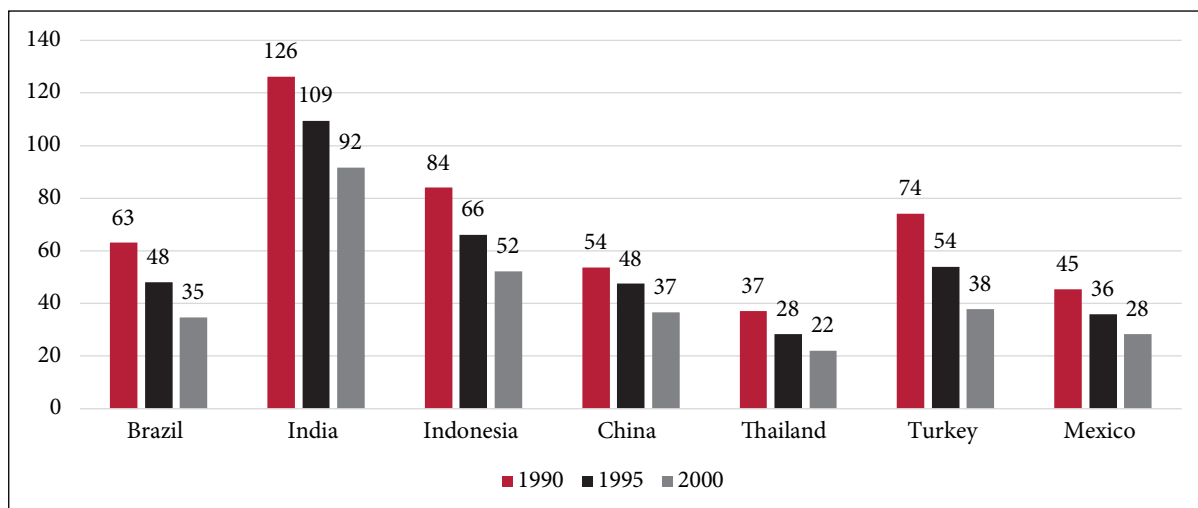
Source: World Bank (2022)

Figure 8: Maternal mortality ratio (per 100,000 live births), 2000
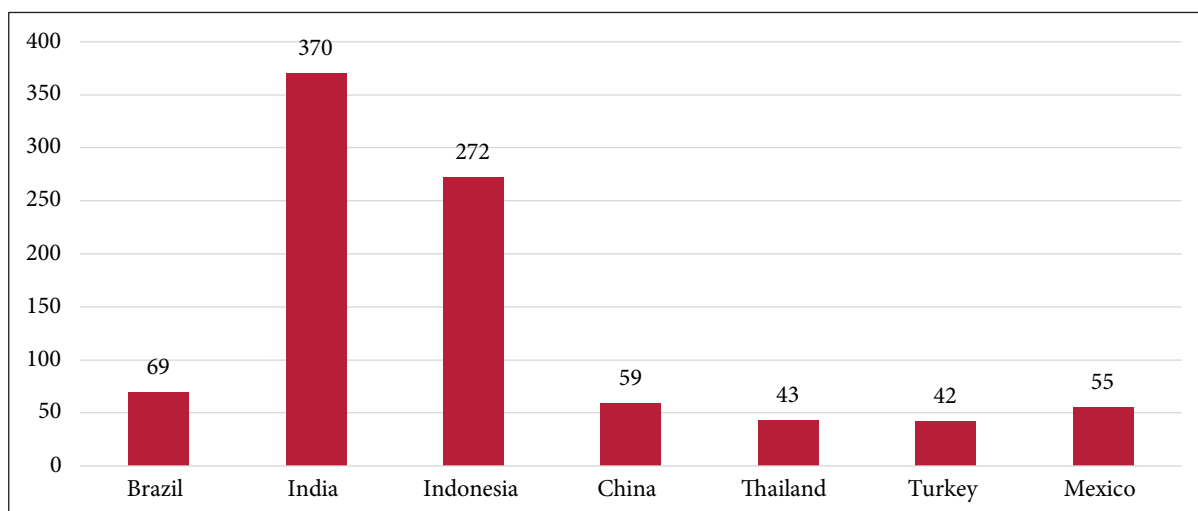
Source: World Bank (2022)

Figure 9: Hospital beds per 1,000 people, 1990
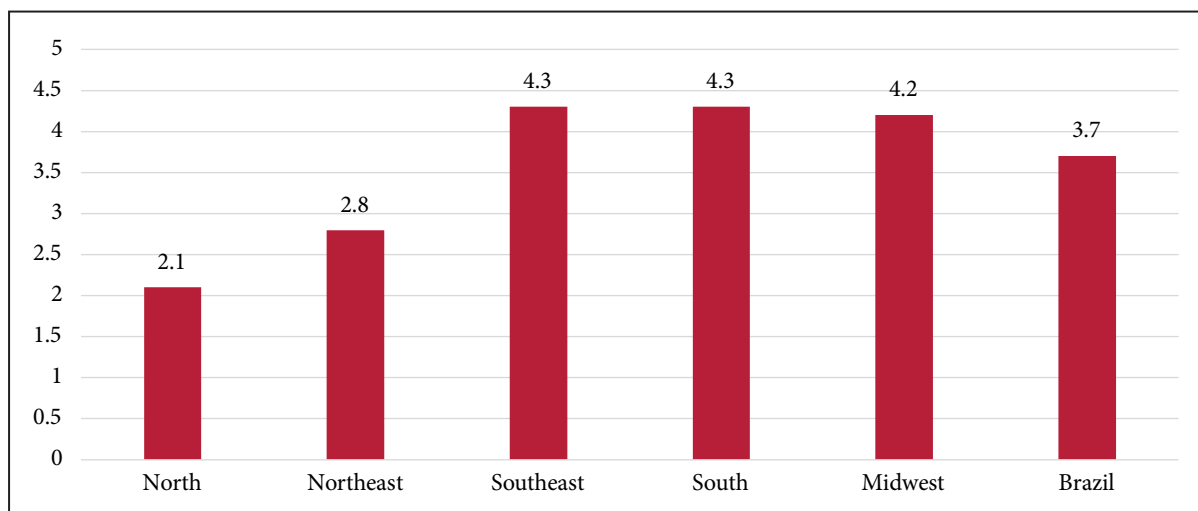
Source: Almeida et al. (2000); Buss and Gadelha (1996)

Figure 10: Physicians per 1,000 people, 1994
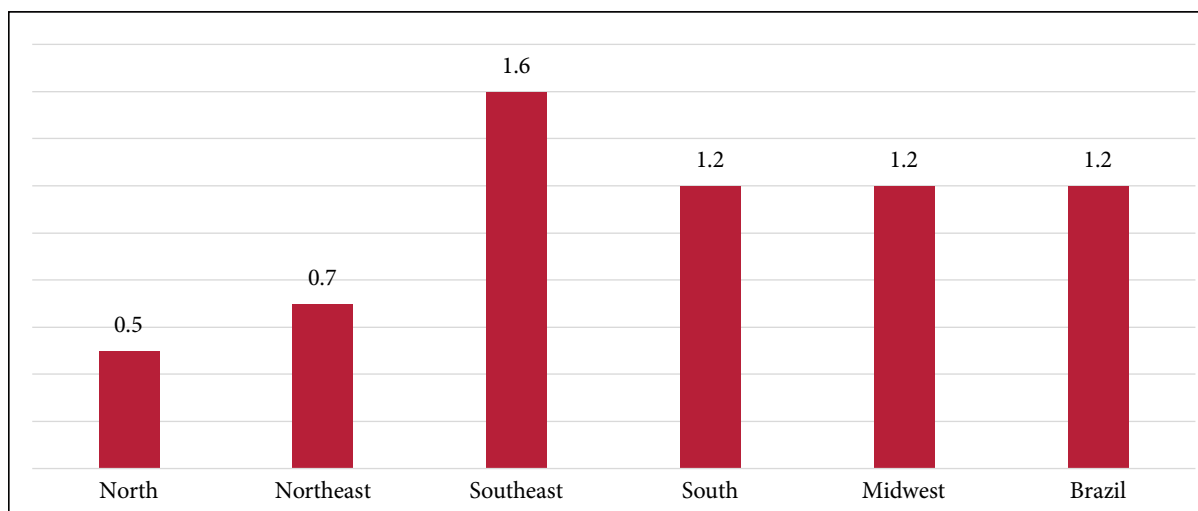
Source: Almeida et al. (2000); Buss and Gadelha (1996)

Figure 11: Public health expenditure (% of total health expenditure)
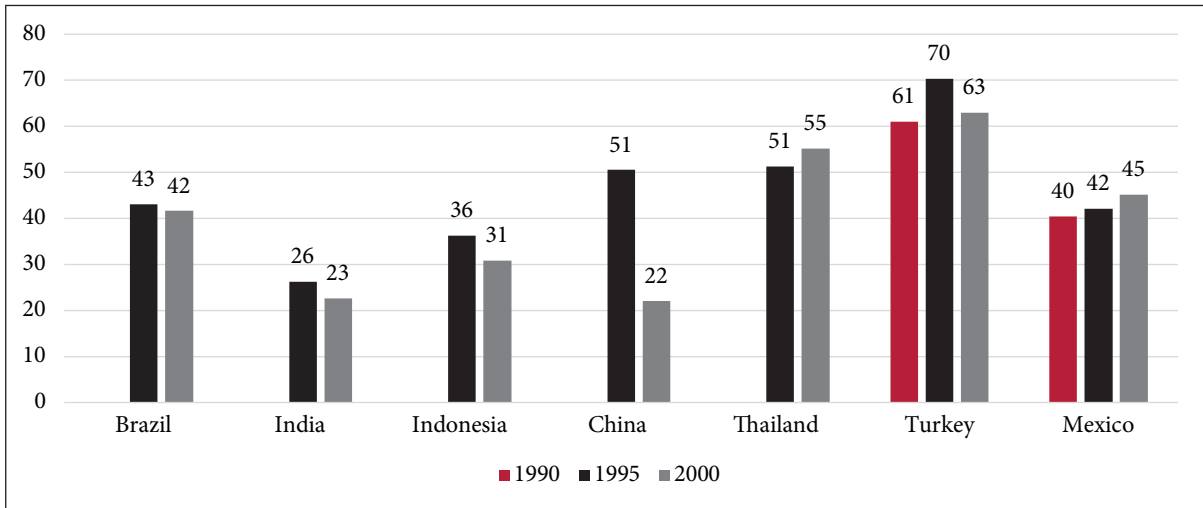
Source: World Bank (2022); PAHO (2018); Tatar et al. (2011); PAHO (2002); DGIS (2022); Mahendradhata et al. (2017); Jongudomsuk et al. (2015)

Figure 12: Out-of-pocket expenditure (% of total health expenditure)
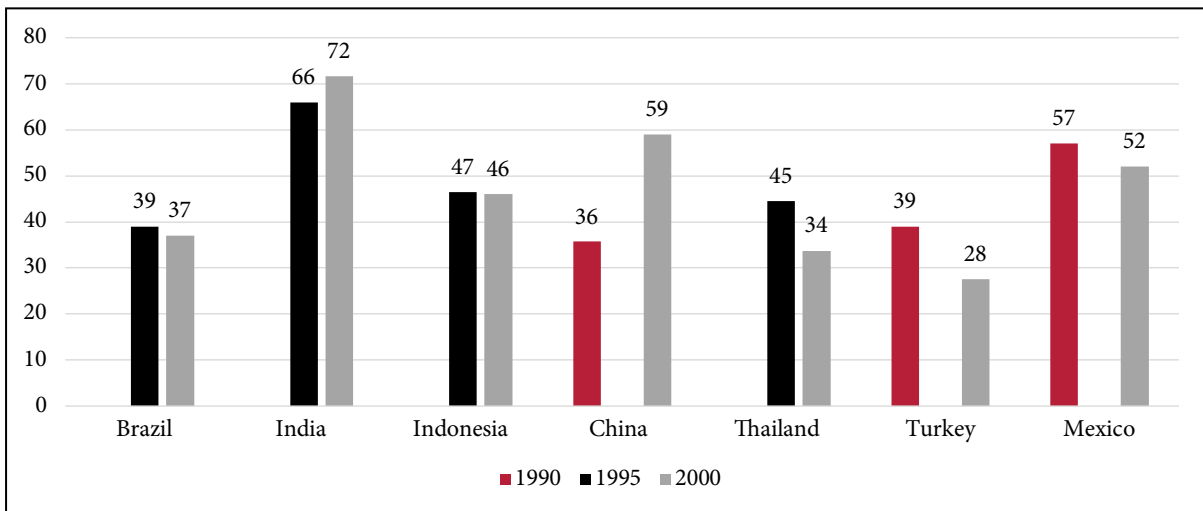
Source: World Bank (2022); PAHO (2018); Tatar et al. (2011); PAHO (2002); DGIS (2022); Mahendradhata et al. (2017); Jongudomsuk et al. (2015)

Figure 13: Hospital beds per 1,000 people
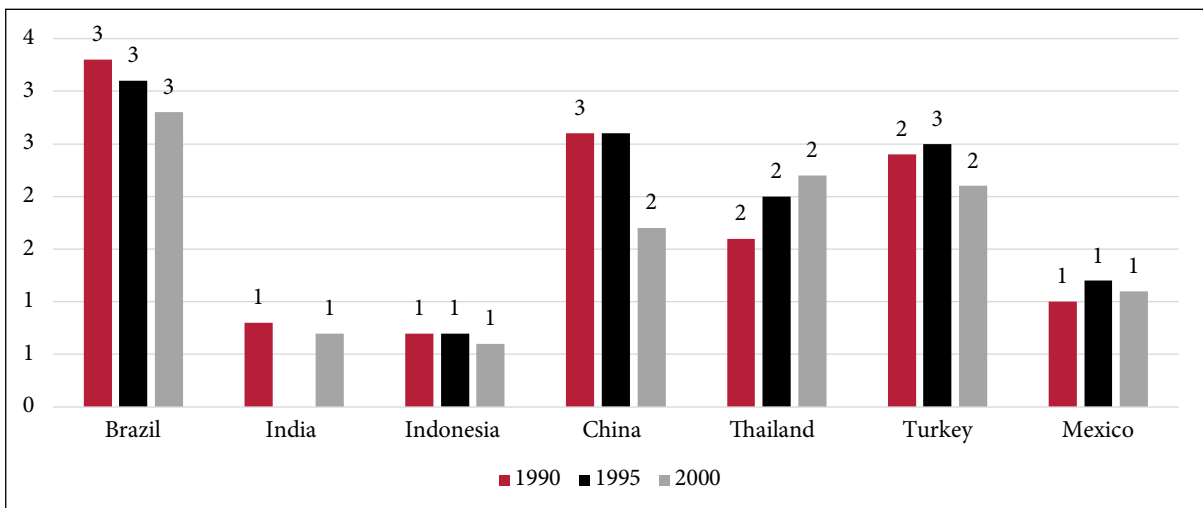
Source: World Bank (2022); PAHO (2018); Tatar et al. (2011); PAHO (2002); DGIS (2022); Mahendradhata et al. (2017); Jongudomsuk et al. (2015)

Figure 14[3]: Physicians per 1,000 people, 1990
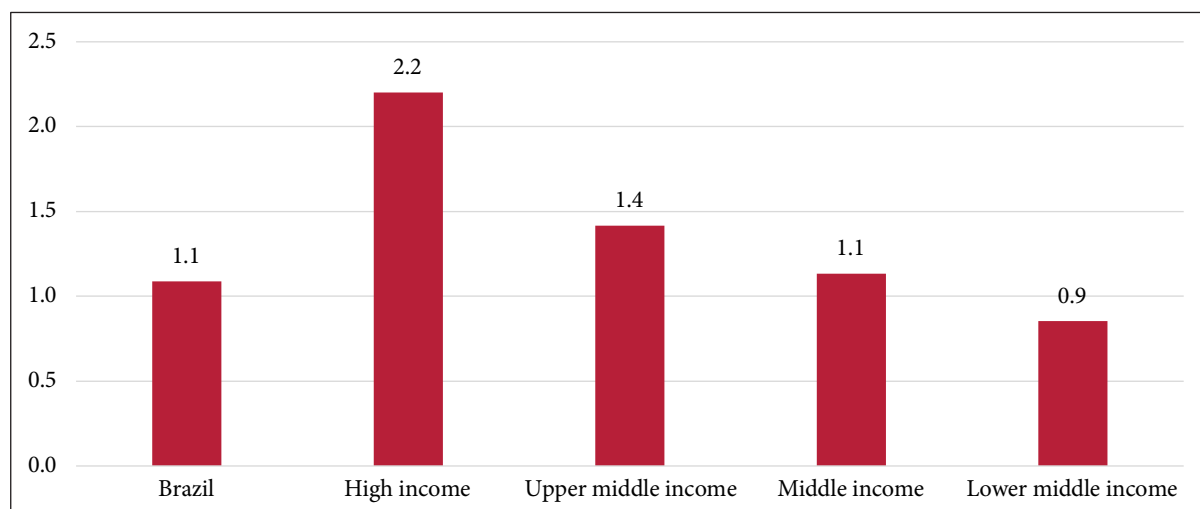
Source: World Bank (2022)

Figure 15: Hospital beds per 1,000 people, 1990
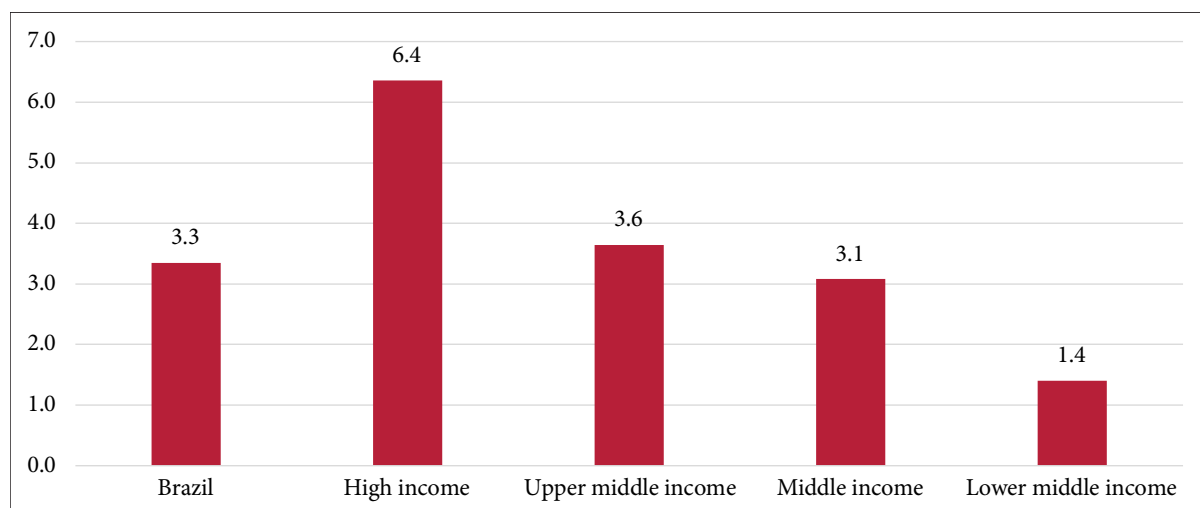
Source: World Bank (2022)

3. Health system transition

The centralisation of financing and administration, a fragmented health delivery system with a predominant private sector, and low public spending in health caused inequities in the distribution of health resources and consequently regional disparities in healthcare access and outcomes. All of these contributed to the rationale for the health reforms in the late 1980s. Even though Brazil was facing an economic crisis and political instability, it proposed a unified health system (SUS) in 1988 that would be serviced entirely by the public sector with the private sector playing a complementary role. The health-sector reforms focused on four main areas: 1) strengthening the financing, provisioning, and regulation of services by the government; 2) decentralisation of the health system; 3) equitable distribution of physical and human resources;[4] and 4) redefining the public–private relationship in the organisation of healthcare (Almeida et al., 2000). The key pre-reform components along with the unified health system (SUS) response are summarised in Table 5.

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[3] Brazil was a LMIC in 1990.

[4] This means that the reform measures sought distinct divisions of responsibility in terms of delivery. Post-reform, municipalities are mainly responsible for primary and secondary care and states for higher-level referral facilities. The federal administration scarcely participates in healthcare provision except for complex-level care provided by university hospitals.

Table 5: Brazil's health system pre- and post-SUS

Components	Pre-reform	Post-reform
Organisation and governance	Centralisation in policymaking and resource distribution (state and municipal autonomy compromised).	State and municipal autonomy were restored. The municipal government is mainly responsible for primary and secondary care. Citizen's participation in policy making increased.
	The federal government was the main financing agency, leading to the concentration of health resources in major cities.	Decentralisation led to greater financial autonomy of municipalities, which ensured a relatively equitable distribution of resources.
	Curative care was at the core of health system functioning.	Shift in focus from curative care to preventive care by deploying family health teams in remote locations.
	Health was an occupational right (not a legal right).	The right to health was made a legal right.
	No patient protection in case of exploitation by private providers.	Quasi-autonomous public agencies (ANS and ANVISA) were created to protect patient rights.
	There was no specific regulation for private clinics and pharmaceuticals.	Two quasi-autonomous agencies (ANVISA and ANS) were created to regulate the private sector, including the pharmaceutical sector.
	Access to limited services for the uninsured population.	SUS provides access to comprehensive care at all three levels of care to everyone.
	Lack of specialised care in poor municipalities.	Inter-municipal coordination along with the respective state and federal government has, to an extent, addressed the issue.
Health financing	No check on physicians' salaries based on performance leading to dual practice (public and private).	Physicians' accountability is ensured by introducing pay-for-performance in PHCs and contracting services through private providers.
	Multiple government financing mechanisms; for example, social health insurance and general taxation.	Unified health financing for public facilities based on a national health service model.
Physical and human resources	Inequitable distribution of health facilities across the country.	SUS increased the density of public health facilities in poorer states.
	Insufficient human resources in poorer states.	SUS increased the density of physicians per 1,000 people in poorer states.
Health service delivery	Health centres provided PHC services but lacked comprehensive preventive and curative services.	Implementation of the family health team programme ensured comprehensive preventive and curative services in poorer states.
Quality of care	No specific quality standards tool was applied to PHC and public hospitals.	The introduction of pay-for-performance and monitoring and evaluation of various components of PHC functioning ensured the quality of care.

Source: Authors' adaptation

3.1. Organisation and governance

Before the SUS reforms in 1990, the key organisational challenges included the inequitable distribution of health resources due to centralised administration, fragmented healthcare delivery leading to duplication and inefficiencies, low priority to preventive and primary care services, and the predominance of the private sector.

Until 1990, the Brazilian health system was organised around INAMPS for curative services and MoH for primary care and preventive services. Five different ministries were responsible for different aspects of health: Ministry of Social Security and Welfare for curative care, Ministry of Health for primary and preventive care, Ministry of Interior for urban water and sanitation, Ministry of Labor for occupational diseases, and Ministry of Education for teaching and university hospitals. Given the large private healthcare system, around 80 percent of the population utilised INAMPS and private facilities for numerous health issues, and only 14 percent utilised state-run facilities. This was compounded by weak regulation of the private sector and the government failing to play a stewardship role.

The SUS reforms sought to dissolve INAMPS and integrate healthcare activities under the stewardship of the MoH. Decentralisation was introduced by delegating financing and administrative authority to state and municipal governments at all levels in their catchment area. The MoH ensured regulation of the private sector. The issue of fragmentation was addressed by transferring health facilities under the INAMPS to the MoH at the federal level and by streamlining preventive and curative care services under the supervision of the MoH.

SUS aimed to strengthen preventive services by initiating a family health programme following the principle of family medicine in 1994. Under this programme, a family health team (FHT) comprising a physician, a nurse, two assistants, and six community health workers was formed to serve 4,000 people. This laid the foundation for a comprehensive primary care system, providing free services at the point of care and shifting the focus from hospitals to primary healthcare.

Given the dominant presence of private providers, SUS contracted out curative and diagnostic services to private providers on the basis of performance criteria including coverage of service provision.

Brazil's health system architecture consists of three main subsystems: 1) the government as the main financer and provider of publicly delivered health services, 2) the government as the financer of privately delivered services, and 3) privately financed and delivered services.

The MoH is responsible for designing health policies and monitoring and evaluating SUS-linked services in coordination and cooperation with the concerned states and municipalities (Figure 16).

One of the main objectives of the health-sector reforms was to change the culture of centralisation in policy decision-making and management of the health sector. Accordingly, decentralisation was promoted by organising the health system at the federal, state, and municipal levels with two institutions at the federal level: the National Health Council (CNS), and the Tripartite Inter-managerial Committee (CIT) (Almeida et al., 2000; OECD, 2021).

The CNS is a permanent body of the SUS, tasked with 1) the formulation and evaluation of national health plans and 2) approval of the health budget and monitoring of its implementation. It is composed of members from government agencies, healthcare providers (both public and private), academicians, civil society organisations, and users who constitute 50 percent of total members (Almeida et al., 2000; OECD, 2021).

The CIT is tasked with developing SUS strategies, guidelines, and resource allocation and is primarily composed of members of the MoH, the National Council of State Health Secretaries, and the National Council of Municipal Health Secretaries (Almeida et al., 2000; OECD, 2021).

The management structures at the federal, state, and municipal levels are similar: there is a health secretariat, a bipartite inter-managerial committee (CIB), and a health council at the state level (Table 6). It is important to note that for those municipalities that do not have sufficient managerial capacity to run the SUS system, the concerned states take up the responsibility of managing SUS in those municipalities (Almeida et al., 2000).

Table 6: Operation and management of the unified health system

Level	Executive body	Operational management	Financial management	Social control
Federal	Ministry of Health	Tripartite Inter-Managerial Committee (CIT)	National Health Fund	National Health Council
State	State Health Secretariat	Bipartite Inter-managerial Committee (CIB)	State Health Fund	State Health Council
Municipal	Municipal Health Secretariat	Municipal Board of Health	Municipal Health Fund	Municipal Health Council

Source: Almeida et al. (2000)

Recognising the need to regulate the private health market, SUS created two quasi-autonomous agencies (national supplementary health agency and national health surveillance agency) to ensure comprehensive care at all levels of complexity—primary, secondary, and tertiary (Figure 16) (Almeida et al., 2000; OECD, 2021). The national supplementary health agency (ANS) is tasked with regulating private healthcare providers, defining the list of medical procedures, and evaluating the technical and operational capacity of private providers and insurers to uphold the core principles of SUS. The creation of policy guidelines for the authorisation, monitoring, and control of the private sector comes under the purview of ANS (OECD, 2021). The National Health Surveillance Agency (ANVISA) is mainly responsible for regulating the pharmaceutical market, ensuring fair drug pricing, and conducting epidemiological surveillance (OECD, 2021).

Prior to SUS, the federal government was the main source of health financing. As wealthier regions had a greater share of health facilities (discussed in a subsequent section), they were able to attract a larger share of the financing.

After SUS, the revenue-generating capacities of different levels of government increased significantly, and, accordingly, the financing of health was distributed across levels of government, with states and municipalities required to allocate a minimum of 12 and 15 percent of their revenue, respectively, to the SUS (Castro et al., 2019).

The financing for most public hospitals is done based on line-item budgeting, for both inpatient and outpatient treatments, with these hospitals having no financial and administrative autonomy. In the case of private contracted hospitals, payments are linked with performance (Table 7), based on the volume of services provided (Forgia & Couttolenc, 2008).

Since the effective operation of PHCs was critical to achieving universality in health coverage, the historical budgeting for PHCs was replaced with a capitation-based payment system linked to the number of enrolled beneficiaries and the number of functioning FHTs and community health workers in the concerned municipalities (OECD, 2021).

In the case of privately owned and run hospitals, a fee-for-service payment mechanism is followed, where the payment is done based on a previously agreed upon fee chart prepared by the Brazilian

Medical Association (AMB). Those not covered by private insurance and who utilise private hospitals not empanelled in SUS have to pay higher than the cost negotiated between the insurer and provider (Forgia & Couttolenc, 2008).

Figure 16: Health organisation of Brazil, 2020
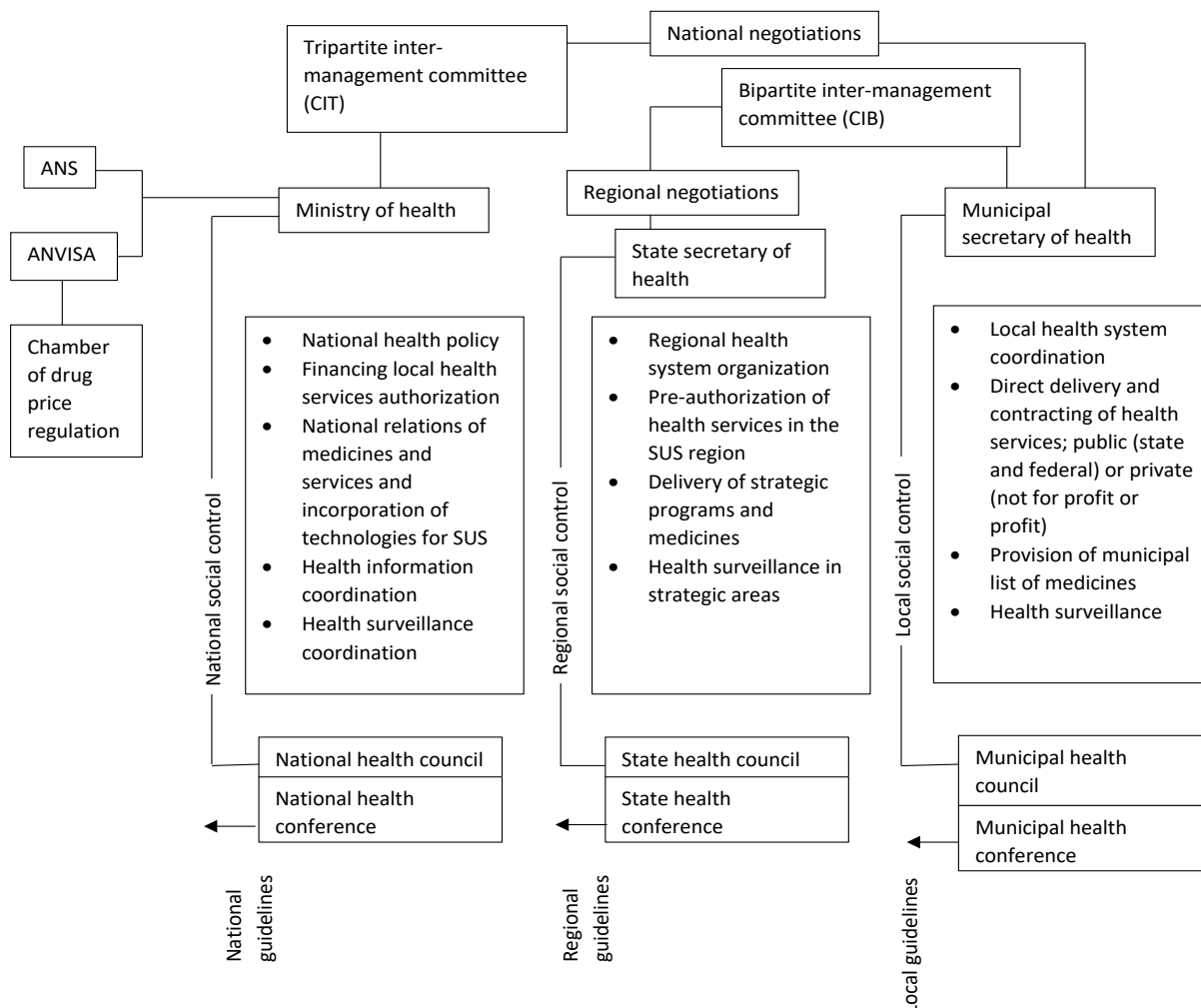
Source: Tikkanen et al. (2020)

Table 7: Hospital payment mechanisms in Brazil

Payment mechanism	Source of fund	Provider	Services	Basis
Prospective case-based payment	Federal	Public and private	Hospitalisation	Fee schedule per case
Prospective fee-for-service payment	Federal	Public and private	Outpatient	Fee schedule per service
Additional incentives, emergency fund (paid to hospitals)	Federal	Public and non-profit	Teaching and research facilities, high-cost care	Service based
Line-item budget	Federal, state, and municipality	Public	Payroll and other expenses	Historical trend
Fee for service	Employers, individuals	Private	All	Negotiated fee schedule
Out-of-pocket	Individuals	Mostly private	All	Fee schedule

Source: Forgia and Couttolenc (2008)

As mentioned, one of the essential elements of the SUS reform process was the decentralisation of health services. This led to the system being organised around three levels of government—federal, state, and municipal—with the municipality taking the most responsibility for service provision. Given the differing capacities across municipalities, they were classified as those tasked with primary care services and those responsible for services across primary, secondary, and tertiary care (Almeida et al., 2000).

The second key organisational reform with respect to healthcare delivery was the focus on primary healthcare, leading to the creation of FHTs comprising a physician, a nurse, two assistants, and six community health workers for every 4,000 inhabitants (OECD, 2021).

An important innovation in strengthening decentralised healthcare delivery was the establishment of healthcare networks organised on the basis of health regions, or clusters of municipalities, in 2011. Health regions integrate the planning and provisioning of healthcare services (primary and specialised care) at the regional level and help extend support to those municipalities that operate at the basic-care level. Both states and municipalities, in coordination with the National Council of Health Secretaries (CONASS) have agreed to operationalise healthcare networks according to local needs (OECD, 2021). The evidence suggests that the integration of primary and specialised care at the regional level has generated positive outcomes in the management of chronic diseases (OECD, 2021).

Achievements and challenges

One of the major achievements of SUS is the decentralisation of health services with municipalities being primarily responsible for the full management of PHCs. Municipalities now account for the major portion of PHC funding, at 61 percent, with the federal government contributing 33 percent, and the remaining funding (6 percent) coming from the state. The services delivered through SUS are free at all three levels of primary, secondary, and tertiary care (Massuda et al., 2022).

The reorganisation of the health system with PHC at its core has shifted traditional health system governance in two ways: First, it has engendered a shift in priorities from medical care to preventive care across all types of diseases. And second, it has increased the involvement of the citizenry in policy decision-making through municipal councils, which has ensured greater accountability and collaboration between the public and private sectors.

Regulation of private providers has contributed to the reduction of out-of-pocket expenditure to below 30 percent from 39 percent at the start of the reform period, by fixing the prices of medicines and medical procedures and reducing disparities in the availability of medical facilities through regulating the location of new private establishments (OECD, 2021).

One of the remaining challenges facing SUS is the fragmentation of the health information system. There are separate information systems to monitor outpatient, inpatient, mortality, and disease burden statistics. MoH is the national coordinator of all these information systems. Although the Brazilian Institute of Geography and Statistics (IBGE) links these information systems, data from all these sources are not compiled, analysed, and presented on one platform.

3.2. Health system delivery

Prior to the SUS reform, the healthcare delivery system was predominantly organised around curative care with a minimal focus on primary and preventive care. Being a hospital-centric system, the majority of low-cost illnesses were treated at private hospitals, with a fraction of the population (14 percent) utilising state-run facilities for preventable diseases. There were multiple reasons for this, including that a large proportion of the population (49 percent) had access to social security and could easily access hospitals for a variety of treatments, the inadequate number of PHCs with

comprehensive care facilities across the nation, and that the majority of physicians were located in developed areas. Dual practice was common, due to the low salary paid by public facilities and a preference for working in major cities (McGreevey, 1988). This created a scarcity of physicians in rural areas and less-developed regions, leading to inequities in access and outcomes. Other challenges included the need to improve responsiveness through decentralisation and to expand coverage of primary healthcare.

The disproportionately high use of hospitals, especially private ones, created a burden on federal government funds, making the health delivery system inefficient. Consequently, as part of a cost containment policy, and with a focus on efficient delivery, SUS reforms emphasised comprehensive primary health, building on the principles of universal healthcare.

SUS initiated one of the world's largest PHC programmes under the Family Health Strategy (FHS) in 1994. Under the FHS programme, a FHT was deployed to serve 2,000–4,000 people based on the socio-economic context of the municipality. With the expansion of FHT, the effective coverage of the population increased from 0.7 percent in 1994 to 64 percent in 2018 (Figure 17).

SUS management responsibilities were delegated to municipalities (based on their financial capacity) to reduce the financial burden of the federal government.[5]

Key policy instruments were deployed to address some of the challenges encountered in the pre-reform period. These included 1) the use of results-based financing to expand the coverage of FHTs; 2) the creation of multidisciplinary teams targeting rural areas and less-developed regions to reduce inequities in access, and 3) the linking of households to FHTs for the provision of comprehensive care at their doorstep, reducing the burden of secondary and tertiary care. Additionally, family health support centres (NASF) were created to extend specialist (obstetrician, psychologist, gynaecologist, and public health worker) support to FHTs based on local needs. Due to these developments, solo practice has become scarce in Brazil, and, to an extent, a shift from medical care to primary care is visible (OECD, 2021).

Results-based financing for PHCs has evolved in the last 30 years. Initially, the idea behind introducing pay-for-performance (P4P) was to increase the coverage of PHCs, especially in less-developed municipalities. There were two components of P4P in 1998: 1) federal financing to municipalities based on the number of enrolled people in their catchment area, 2) funds transfers from the federal government to municipalities on the basis of the number of functioning FHTs (which varied from one to nine based on the size of the municipality) and community health workers (six per FHT) (OECD, 2021).

It was observed that coverage of basic care under FHTs increased significantly from 6.7 percent to 53.4 percent during 1998–2011 as a result of capitation payments (Figure 17). However, with the rapidly changing epidemiological profile, and to improve the quality of PHCs to further increase the coverage of FHTs, the MoH introduced a national programme to improve primary care access and quality (PMAQ) in 2011. PMAQ was an additional incentive for municipalities to improve access, utilisation, and outcomes indicators.

The transfer of funds from federal to municipal governments was conditional on meeting standards of care at PHCs and was measured based on three broad indicators: structure, process of care, and outcome indicators. Structure included the availability of drugs and equipment; the process of care was measured by ANC, immunisation, and treatment completion rates; and outcome indicators included patient satisfaction and years of life lost due to chronic diseases. Even though PMAQ was voluntary, almost all FHTs participated in the programme by 2019 (OECD, 2021). It is important

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[5] For those municipalities that had lesser financial capacity to manage SUS, their respective state governments took on the full responsibility of SUS management. In these cases, municipalities were mainly responsible for providing basic care.

to note here that the disbursement of incentives to the respective municipalities was conditional on external evaluations conducted by independent academic institutions that cross-verified the infrastructural, process, and outcome indicators.

During the three waves of implementation (2011–2019), it was found that PMAQ was positively associated with an increase in the provision of maternal and child-related healthcare, especially among poor-performing PHCs (Thumé & Oliveira, 2021). The rate of hospitalisation for chronic diseases was reduced by 14 percent in those municipalities that adhered to PMAQ (OECD, 2021).

In 2020, Brazil modified the PHC funding mechanism as the earlier criteria for transferring federal funds on a capitation basis benefited municipalities in developed regions due to high demand. The erstwhile payment mechanism did not consider socio-economic factors and the demographic profile of people living in the municipalities. The new funding mechanism incorporated incentives for PMAQ (OECD, 2021).

The new PHC funding mechanism (*Previne Brasil*) is based on 1) weighted[6] capitation payments, i.e., payment calculations that incorporate the registered population and their socio-economic vulnerability and geographic factors, 2) performance[7] incentives linked to seven priority areas mainly focused on maternal and child health and chronic diseases, 3) incentives to improve overall primary healthcare by addressing issues in the identified strategic areas—e.g., digitisation of PHCs, increasing the supply of multidisciplinary cadre by establishing multi-professional residencies, and increasing the supply of doctors by establishing medical schools in rural areas.

Figure 17: Family health strategy coverage (%), 1994–2018
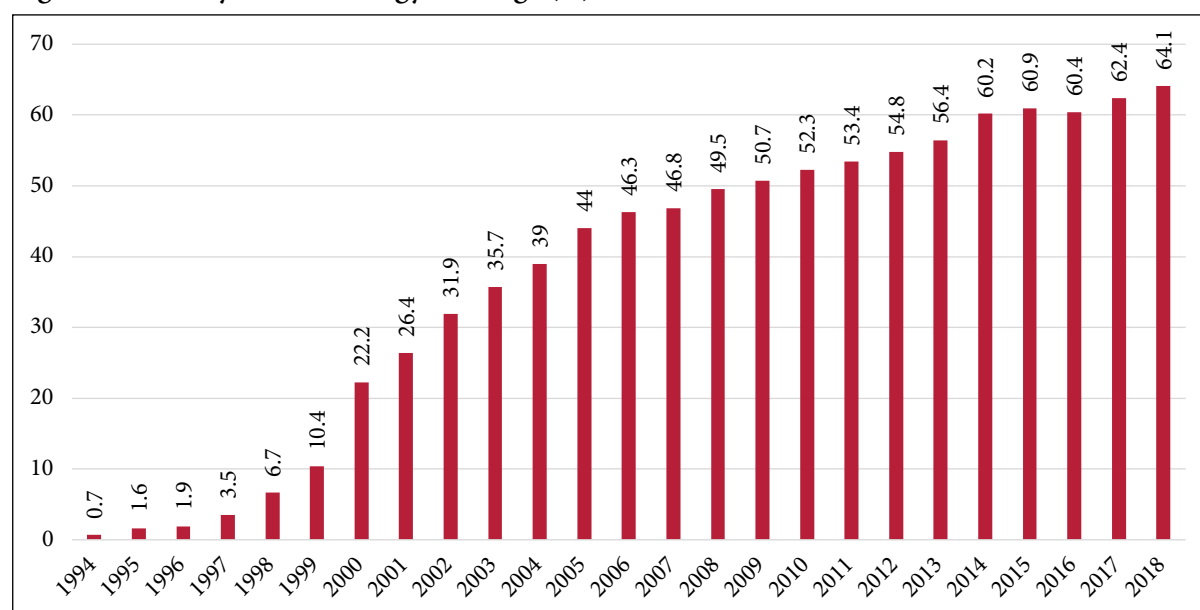
Source: Machado and Silva (2019, p. 7)

In federal units, mainly concentrated in the southern region, the SUS has introduced public–private partnership models where funding for hospitals is linked to performance indicators such as coverage of services, although public hospitals linked to pay-for-performance criteria form less than 5 percent of the total public hospitals under SUS. Most public hospitals are funded through input budgeting. Therefore, the SUS faces significant challenges in terms of increasing the efficiency of publicly run hospitals (Forgia & Couttolenc, 2008; Forgia & Harding, 2009; Botega, Andrade, & Guedes, 2020).

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6   Number of people enrolled, socio-economic profile, and geographic profile
7   On maternal and child health, and chronic diseases

Since funding to contracted private hospitals is based on the volume of service delivery and coverage, this has led to competition between public and contracted private hospitals. The literature suggests that contracted private hospitals are concentrated in the southern region, where the demand for healthcare (in terms of hospitalisation) is higher (Table 8) (Forgia & Harding, 2009; Cavalcanti et al., 2022; Campos, 2018; Rudey, Leal, & Rego, 2020). Therefore, contracted private hospitals will end up getting more public money.

Table 8: Distribution of hospital procedures in SUS hospitals, 2017–18

Region	Surgical procedure (%)	Diagnostic procedure (%)	C section (%)	Population (%)
North	9	5	12	8.6
Northeast	25	18	31	27.6
Southeast	41	51	34	42
South	18	18	14	14.3
Mid-west	7	8	9	7.6
Total	100	100	100	100

Source: Ministry of Health (2022)

Achievements and challenges

The SUS has made significant progress in delivering essential health services and improving health outcomes since its implementation in the 1990s. With the expansion of the government healthcare network, Brazil had the highest coverage of all essential health services among Latin American countries (Appendix, Table 1a), which was equivalent to the UMIC average in 2017. There have been consistent improvements in life expectancy at birth and maternal, neonatal, and child mortality. Brazil has outperformed Latin American countries in 2017 (average) in terms of health status (Araujo, Lobo, & Medici, 2022), although gaps remain when compared to UMICs in terms of maternal and child health (Table 9).

Table 9: Health outcomes, 2019

Countries	Life expectancy at birth, total (years)	Maternal mortality ratio (per 100,000 live births)	Infant mortality rate (per 1,000 live births)	Neonatal mortality rate (per 1,000 live births)
Brazil	75.9	60	13.3	8.9
High Income	80.9	11	4.2	2.8
Upper-middle-income	75.9	41	9.5	5.9
Middle income	72	184	26.6	17

Source: World Bank (2022)

It is important to note here that decentralisation and primary care were the key instruments of change in improving the rate of health outcomes in the past two decades. The rate of improvement in infant and child mortality accelerated after the 1990s (Table 10). It was found that a 10 percent increase in FHT coverage reduced the infant mortality rate by 4.5 percent (OECD, 2021).

Besides this, the FHT intervention was particularly associated with a decline in the hospitalisation rate per 10,000 people in the past two decades. FHTs were instrumental in reducing hospitalisation

due to cardiovascular disease (heart failure), stroke, asthma, and cerebrovascular disease. A decline of 45 percent in the overall hospitalisation rate per 10,000 people was observed during 2001–2016 (OECD, 2021).

It is important to note here that the expansion of FHTs to include multidisciplinary professionals had a positive impact by reducing the incidence of non-communicable diseases in Brazil. This is mainly due to regular screening of people for the risk of developing cancer, diabetes, and cardiovascular disease. This is also reflected in the overall mortality due to non-communicable diseases in 2019; Brazil has a lower proportion of deaths due to cardiovascular diseases and cancer as compared to the OECD countries' average. However, it still forms the greater proportion of overall mortality in the country (Figure 18) (OECD, 2021).

Table 10: Health outcomes, 1960–2020

| Indicators | 1960 | 1980 | 1990 | 2000 | 2020 | Percentage change | | |
						1960–1980	1980–2000	2000–2020
Life expectancy at birth, total (years)	54	62.6	66.3	70	76	16	12	9
Mortality rate, neonatal (per 1,000 live births)	-	35.2	25.4	18.5	8.7	-	47	53
Mortality rate, infant (per 1,000 live births)	128	76.6	52.6	30.4	13.1	40	60	57
Mortality rate, under-5 (per 1,000)	170	96.3	63.1	34.7	14.7	43	64	58
Maternal mortality ratio (per 100,000 live births)	-	-	-	73.3	57.9 (2019)	-	-	16
Mortality due to NCD between 30 years and 70 years of age (%)	-	-	-	25	17 (2015)	-	-	-

Source: World Bank (2022)

PHCs have been found to function more efficiently in less-developed regions than public hospitals. The increased efficiency of PHCs is attributed to the expansion of FHTs and the increase in their coverage; the latter was made possible through the deployment of six community health workers per FHT. This has enabled increased access to health services, reduced hospitalisation, and, consequently, a decline in mortality (Cavalcanti et al., 2022; OECD, 2021).

The Brazilian PHC system has been highly responsive to patient needs, with PHC physicians involving patients in decisions about their treatments and providing easy-to-understand explanations about their illnesses. Most patients registered with FHTs had a better experience as compared to the non-registered in 2019 (OECD, 2021).

Since the FHS programme was seen to be fundamental to achieving UHC, it is critical to analyse the challenges faced during programme implementation to draw lessons for similar contexts. Even though FHS increased the coverage of primary healthcare, the distribution of FHTs is found to be heterogeneous across the region (Table 11). There are two main reasons for this:

1) A large proportion of the population living in developed municipalities prefers private health insurance plans (Silva, et al., 2022), and mayors in these municipalities align their political interests with this group. Therefore, political leaders are disincentivised from allocating resources to FHS. In other words, the predominance of the private sector is a big challenge for the expansion of the FHS in developed municipalities (Andrade et al., 2018). The predominance

of the private sector is also evidenced by the fact that, in 2019, doctors' consultations per person were 2.2 for government primary care, whereas it was 6 for private health insurance holders.

2) Dual practice by physicians impeded the supply of physicians in rural areas and less-developed regions before 1990. SUS did not abolish dual practice by physicians. A total of 74 percent of the total physicians still practice in both public and private facilities (Oliveira et al., 2017). This creates continuing inequities in the distribution of human resources.

Table 11: Proportion of the population enrolled in FHS, 2019

Region	Population enrolled in FHS (%)	Population (% of total)
North	62	8.6
Northeast	73	27.6
Southeast	55	42
South	68	14.3
Mid-west	60	7.6
Urban–rural differential		
Urban	60	87
Rural	79	13

Source: Giovanella et al. (2021)

Besides this, the FHS aimed at shifting the focus from hospital care to primary care, i.e., treatment of preventable diseases at the PHC level. However, it has not fully succeeded in achieving this. Fifty percent of diabetic patients first contacted secondary or tertiary care hospitals in 2019, and PHCs were their last point of contact (OECD, 2021).

The expansion of the FHS has not been able to reduce deaths due to non-communicable diseases (NCDs) (Figure 18). It has been suggested that the increasing burden of NCDs is strongly associated with the prevalence of modifiable risk factors such as physical inactivity, obesity, smoking, and alcoholism.

Brazil has not been able to curb the prevalence of these risk factors, which means that a greater emphasis on health promotion and prevention is required.

Figure 18: Growing burden of disease due to NCDs, 2019[8]
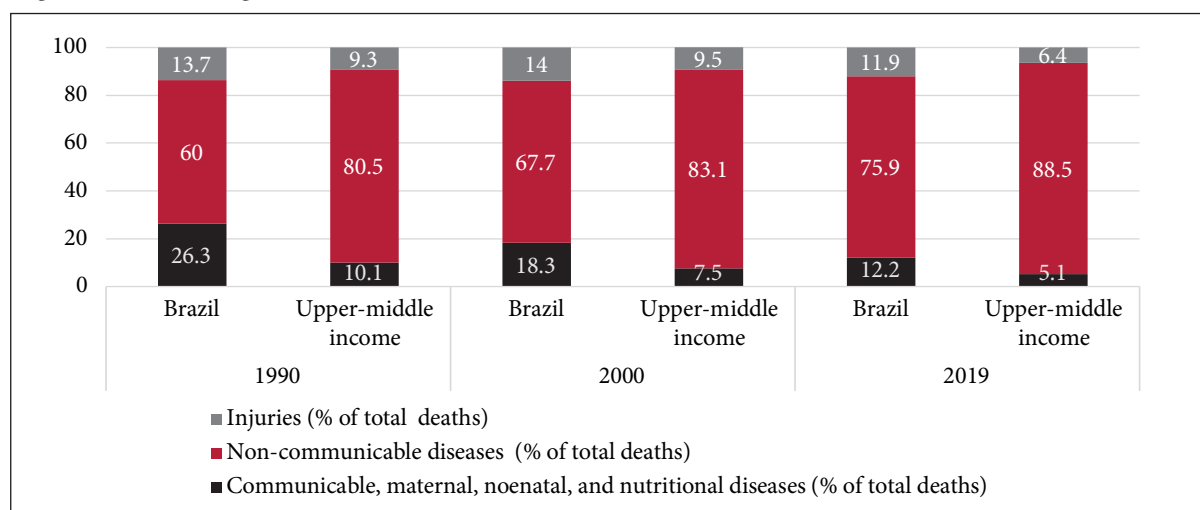
Source: IHME (2019)

Further, the SUS has not made significant changes towards ensuring the accountability of public hospitals. Most public hospitals (> 95 percent) are governed by a traditional bureaucratic model, where pay-for-performance has not been implemented. Private hospitals, on the other hand, have

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[8] The graph compares Brazil with upper-middle socio-demographic index (SDI) countries according to the Institute of Health Metrics and Evaluation. SDI is the composite index comprise of income, education, and fertility. Here, income has been taken as a proxy of SDI.

performance-linked global budgeting, leading to greater efficiency and accountability. This results in low efficiency of service delivery within public hospitals where the existing supply of physical and human resources are not generating equivalent outcomes (higher mortality as compared to performance-linked private hospitals) (Forgia & Harding, 2009; Soares, Pereira, & Milagre, 2017; Botega, Andrade, & Guedes, 2020).

3.3. Physical and human resources

Human resources

Even though Brazil did not have as significant a scarcity of physicians and nurses as other lower-middle-income countries (LMICs) in 1990, it faced a substantial shortage of physicians in its less-developed regions due to the inequitable distribution of human resources (Figure 10, 14). The availability of physicians per 1,000 people in less-developed regions (north and northeast) was less than half than that in developed regions (the southern region).

One of the main reasons for the inequity was the comparatively lower salary paid by public hospitals and the lower incentive to work in government PHCs. Consequently, physicians engaged in dual practice (public and private) to compensate for the lower salary. Since the majority of private facilities were located in developed regions, physicians preferred to work in these regions to earn more.

Since the inception of the SUS, Brazil has taken several initiatives post-2000 to improve access to medical training in less-developed regions. These included placing qualified doctors in municipalities where more than 20 percent of the population lived in extreme poverty. The government offered various incentives in terms of providing personal and professional support to doctors to perform their activities (Oliveira et al., 2017). These included increasing nurses and doctors in poorer municipalities by providing study grants to students who want to specialise in family and community medicine.

Among all the initiatives, the More Doctors Programme has made the greatest contribution to increasing the supply of doctors in less-developed regions. Initiated in 2013, the More Doctors Programme aims to increase the availability of physicians in PHCs functioning in less-developed regions. Mainly funded by the federal government, the programme had three main objectives: 1) improve PHC infrastructure, 2) increase the number of medical schools and primary care residency positions in less-developed regions, and 3) increase the emergency provision of physicians in PHCs (Oliveira et al., 2017).

The first two components of the programme were intended to have long-term benefits, whereas the third component envisioned filling the gap rapidly by recruiting physicians in large numbers. To do this, the federal government recruited more than 16,000 physicians having prior experience in family medicine from within and outside the country to work exclusively in the FHS programme. Brazil entered into agreements with various governments, especially with Cuba, to supply doctors to less-developed regions (OECD, 2021).

The physicians recruited through the More Doctors Programme were enrolled in three-year contracts with the MoH and could get a licence to practice without passing the national exam. In addition to the salary provided by the MoH, the municipal government covered costs related to transportation, food, and lodging. The programme also aimed to alleviate geographic disparities in access to medical training by regulating the establishment of new medical schools and creating 11,500 new positions in 2013–2017 in less-developed regions. Additionally, the medical undergraduate curriculum emphasised training new graduates for PHC provisioning aligned with SUS objectives (Oliveira et al., 2019; OECD, 2021).

Evidence suggests that the total number of physicians increased by 12 percent during 2013–2018 due to the programme, with the increase being more pronounced in municipalities where 20 percent or more of the population lived in extreme poverty. This period saw an increase in medical consultation by 9.4 percent and a reduction in hospitalisation by 4.6 percent (Hone et al., 2020).

Historical trends in the physician growth rate suggest that there has been consistent growth in the availability of overall physicians due to multiple human-resource programmes after the 2000s (Figure 19). With the transition from LMIC to UMIC, Brazil was able to increase the supply of physicians per 1,000 people in line with the norm for UMIC countries. However, geographic disparities continued (Tables 12 and 14).

The supply of nurses increased as well, mainly due to the initiation of the FHS, which required multi-disciplinary teams (physicians, nurses/midwives, and community health workers) (Viacava, et al., 2018). The annual increase in nurses was also influenced by the undergraduate programme, which trains 50,000 nurses per year, leading to a 156 percent growth in the nurse population (Table 13). The growth in the nursing workforce has improved the nurse-to-physician ratio, which currently stands at 3.4 nurses per physician, superseding the OECD average of 2.6. Additionally, 250,000 CHWs are placed in different geographic regions to serve 61 percent of the population in 2019 (OECD, 2021).

Figure 19: Physician growth trend, 1999–2017
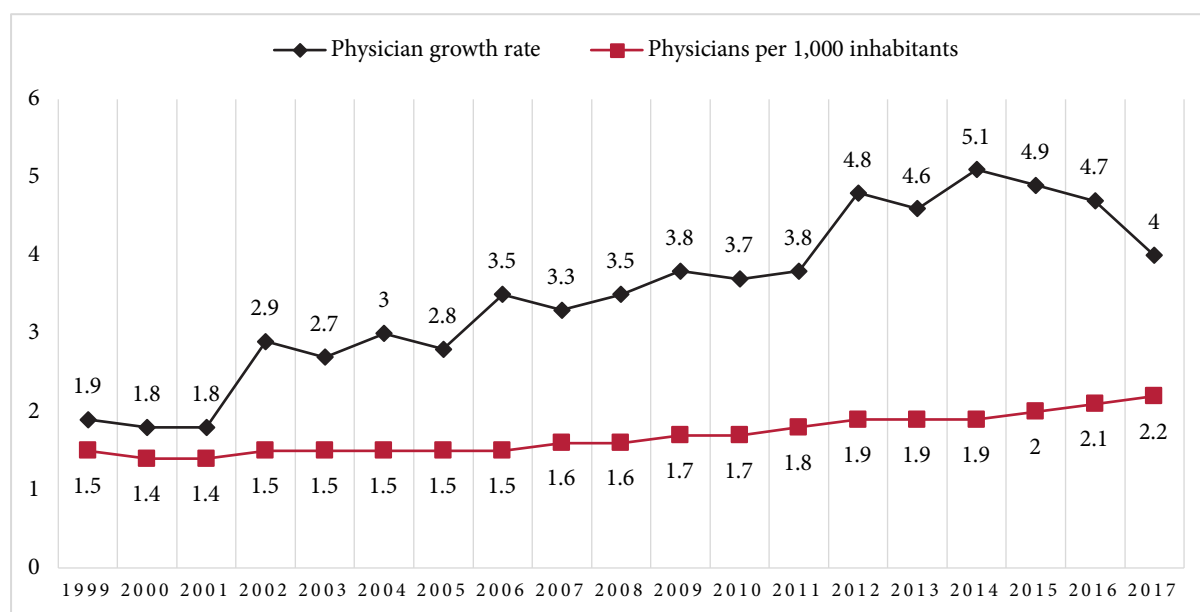
Source: Scheffer et al. (2020)

Table 12: Physicians per 1,000 people

Country	1990	2000	2010	2017
Brazil	1.1	1.4	1.8	2.2
Lower middle income	0.9	0.7	0.7	0.8
Middle income	1.1	1.2	1.3	1.5
Upper middle income	1.4	1.8	2.0	2.3
High income	2.2	3.0	3.7	3.7
OECD members	2.1	3.0	3.6	3.8

Source: World Bank (2022)

Table 13: Nurses and midwives per 1,000 people

Country	1990	2000	2017
Brazil	0.9	3.8	9.7
Middle income	0.9	1.6	2.7
Upper middle income	1.1	1.7	3.3
High income	NA	8.1	11.4
OECD members	NA	7.3	10.4

Source: World Bank (2022)

Table 14: Geographical distribution of physicians, 2017–18

| Region	Population (%)	Physicians per 1,000 inhabitants	Distribution of physicians (%)
Brazil	100	2.2	100
North	8.6	1.2	4.6
Northeast	27.6	1.4	17.8
Southeast	42	2.8	54.1
South	14.3	2.3	15.2
Mid-west	7.6	2.4	8.3

Source: Buzza et al. (2019)

Physical resources

Prior to the reforms, the health infrastructure (in terms of beds per 1,000 people) in Brazil was inequitably distributed as well. The number of hospital beds at the national level was higher in Brazil than in countries with a similar GDP per capita (LMICs); however, there were fewer beds in less-developed regions than in cities (Figure 9, 15). Similarly, less-developed municipalities lacked outpatient facilities to cover basic illnesses (Buss & Gadelha, 1996).

SUS reform sought to address inequities in the distribution of health facilities by expanding outpatient facilities in less-developed municipalities by creating an FHT for every 2,000–4,000 people in 1994. The number of FHTs has increased significantly from 4,000 in 1998 to 43,234 in 2019 (OECD, 2021).

Conversely, the growth in the number of public hospital facilities was marginal, from 2,034 in 1990 to 2,435 in 2019. Further, the number of beds in public hospitals comprised 38 percent of the total hospital beds in 2019 (Figure 20). Therefore, SUS aimed to leverage the existing private sector by contracting inpatient services (OECD, 2021; Elias & Cohn, 2003).

Figure 20: Hospital beds by ownership types (% of total beds), 2019
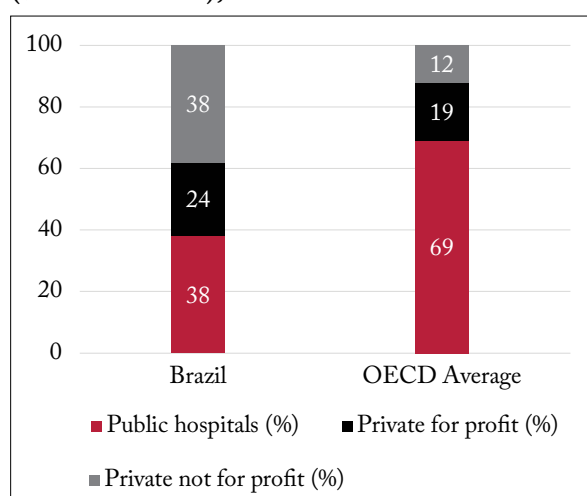
Source: OECD (2021)

SUS aimed to achieve equity in the distribution of health establishments (primary, secondary, and tertiary) by allocating more health facilities to less-developed regions, whereby the north and northeast regions witnessed relatively higher rates of improvement in terms of receiving physical resources during the first 20 years of SUS implementation (Table 15).

It is interesting to note the decline in the total number of beds even though there was a sustained increase in the number of public hospitals in the post-reform period (Table 16). This is mainly due to the closure of private hospitals (less than 50 beds) during the same period, with the growth of hospital chains (Matarazzo, 2020).

Table 15: Health establishments, 1980–2009[9]

Region	1980	1990	2002	2009	Population (%), 2009	Percentage change, 1980–2009
North	784	2,654	5,137	6,305	8.0	704
Northeast	5,425	10,791	18,911	28,234	28	420
Southeast	7,532	12,895	24,412	35,351	42.3	369
South	3,563	7,166	11,757	15,954	14.5	348
Mid-west	1,185	2,195	5,125	8,226	7.3	594
Total	18,489	35,701	65,342	94,070	100	409

Source: IGBE (2022)

Table 16: Hospital beds per 1,000 inhabitants, 1970–2017

Country	1970	1990	2000	2010	2017
Brazil	3.7	3.3	2.8	2.4	2.1
Middle income	1.4	3.1	2.0	2.0	2.4
Upper middle income	1.9	3.6	2.8	2.9	3.9
High income	9.1	6.4	6.1	5.4	5.3
OECD members	8.7	5.6	5.5	4.9	4.7

Source: World Bank (2022)

Achievements and challenges

To achieve greater equity in the availability of physicians, SUS has boosted the supply of physicians in the last 30 years. Similarly, the availability of nurses and midwives has increased significantly, surpassing the UMIC average in 2017. This has contributed to expanding FHT coverage by utilising multidisciplinary teams.

Even though Brazil has witnessed sustained growth in the total number of physicians and had matched the UMIC average of 2.3 physicians per 1,000 inhabitants in 2017, the inequitable distribution of physicians across regions continues (Alonso, et al., 2017). The southern and mid-western regions (64 percent of the total population) account for 78 percent of the total physicians whereas the northern region (36 percent of the total population) has the remaining 22 percent of the total physicians (Table 14).

This inequity is also evident across the types of providers. Most specialists (68 percent) operate exclusively in the private sector (OECD, 2021). Further, such specialists are concentrated in the secondary and tertiary sectors. On the one hand, this impedes the expansion and efficient functioning of FHTs, and on the other, it overburdens physicians and specialists at hospitals.

It is important to note here that under the Family Health programme, physicians in Brazil are required to be specialised in family and community medicine, but out of the total 60,000 practising physicians at PHCs, only 9 percent have a speciality in community medicine. The most common reason cited for the scarcity of specialist physicians is the low number of seats in public medical colleges, which are concentrated in the southern region (OECD, 2021). This not only increased the

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[9] Data for health establishments post-2009 is available at Ministry of Health website (access through IBGE). However, due to discrepancies in the MoH (National Register for Health Establishment) and survey data, health establishment data for period 1980–2009 accessed through IBGE is used.

gap in demand and supply but also caused a geographical imbalance in the supply of community medicine doctors.

The existing data suggests that all these programmes supplied doctors to FHTs, and more doctors have been diverted to FHTs than traditional PHCs. Further, an increase in the availability of doctors in FHTs is positively associated with an increase in PHC coverage, which now stands at 75 percent (Figure 21) (Fava & Lapão, 2021).

Despite several initiatives, Brazil has not been successful in alleviating regional disparities in the distribution of physicians, leading to the replacement of the More Doctors Programme with the Doctors for Brazil programme in 2019. In this new programme, the government narrowed down its focus from building basic healthcare centres in the poorest areas to increasing the density of physicians (Biernath, 2020).

Figure 21: Association between the supply of PHC doctors and coverage
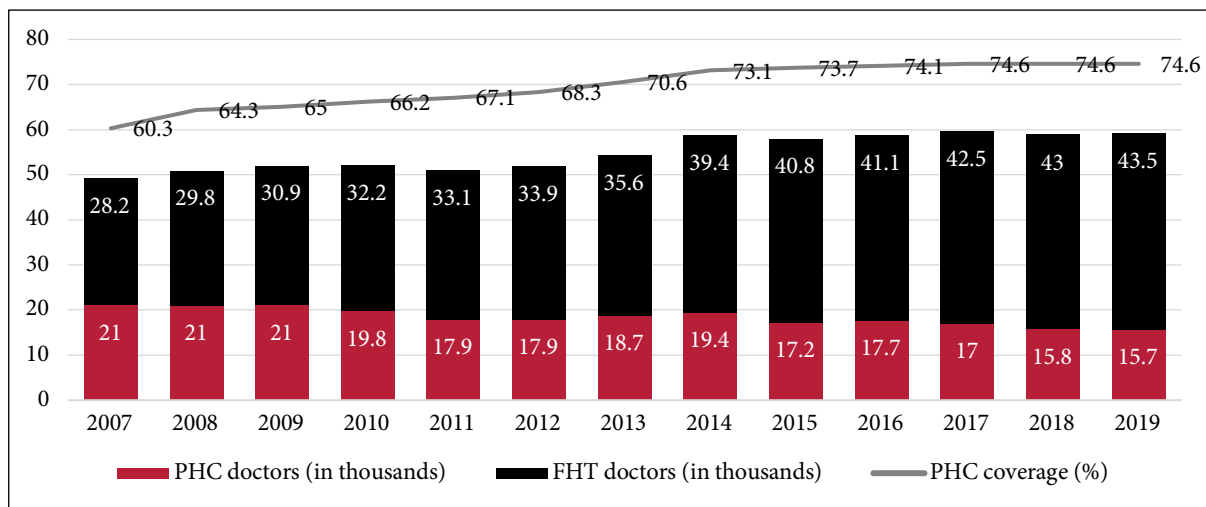
Source: Fava and Lapão (2021)

In terms of physical infrastructure, even though more health establishments were constructed in less-developed regions after the reforms, inequity in the distribution of health facilities exists (Figueiredo, et al., 2021) (Table 15). The number of total health facilities in the northern region is not commensurate with the percentage of the national population residing in that region. Further, the total number of hospital beds per 1,000 inhabitants does not match the average level of UMICs and OECD countries (Table 16).

One of the main reasons for the shortage of government health facilities is the underfunding of the SUS since its inception. Brazil could not channel sufficient funding to boost government health infrastructure mainly due to the intermittent economic recession during the late 1980s, 1990s, and early 2000s. Therefore, even though a new tax (Temporary Contribution on Financial Transactions, CPMF) was levied on financial transactions to generate revenue for the health sector, most of the funds were diverted to debt repayment (Muzaka, 2017).

3.4. Health system financing

Prior to the SUS reform, the federal government controlled more than 70 percent of the total public health resources, leading to the centralisation of health financing and administration. This led to inequities in the distribution of health resources, as wealthier regions got more funding due to the concentration of health facilities. Additionally, successive economic crises in the 1980s severely affected federal funding.

Therefore, one of the main objectives of SUS was decentralising health financing to release central resources for public debt payments. Municipalities were given greater financial autonomy in terms of allocation and expenditure of both federal and local funds. The federal government's share in the total government health expenditure has consistently reduced, and the shares of states and municipalities have increased after the SUS reforms (Table 17). While the capacity of municipalities to manage SUS has improved, the federal government still controls the greater share of total health financing.

Table 17: Trends in health expenditure, 1990–2018 (in percentage)

Indicator	1990	2000	2010	2018
Total health expenditure (proportion of GDP)	6.7	8.3	7.9	9.5
Government health expenditure (proportion of THE)	43	41.6	45	41.9
Private health expenditure (proportion of THE)	56.9	58	54.7	58
Out-of-pocket expenditure (proportion of THE)	NA	36.6	29.4	27.5
Federal government expenditure (proportion of GHE)	73	50	44.7	43.2
State government expenditure (proportion of GHE)	15	24.5	22.3	25.7
Municipal government expenditure (proportion of GHE)	12	25.4	28.4	31

Source: Massuda et al. (2022)

Note: THE: total health expenditure; GHE: government health expenditure

Since Brazil adopted the public healthcare model, it was expected that the reform measures will break the vicious cycle of consistent underfunding of the government health system. However, successive political regimes failed to increase public funding for the healthcare system. One explanation points to the simultaneous implementation of neoliberal reform measures aimed at higher economic growth, which ended up shrinking the fiscal space for healthcare spending (Muzaka, 2017).

To curb the issue of underfunding, the government created a social security budget in 1988 with diversified funding sources including 1) payroll contributions from formal employers and employees; 2) taxes on company net profits; 3) taxes on lottery revenues and company billings (Almeida et al., 2000). The social security budget aimed to provide stable and sustained funding to healthcare that would not be affected by economic crises. However, the government used the funds generated for various other purposes that were not previously included under the objectives of the social security budget, such as social assistance programmes and public debt payments (Almeida et al., 2000).

In the early 1990s, the government took two major steps to fuel public funding. A new emergency social fund was created to prioritise healthcare funding, although 20 percent of the fund was ultimately directed to paying off public debt, thus reducing the fiscal space for health. Second, a new tax (Temporary Contribution on Financial Transaction, CPMF) was levied on all financial transactions to fund healthcare, but two-thirds of the funding was again used for public debt payment (Almeida, et al., 2000).

Thus, economic instability after the 1990s constrained the federal fund, and public funding (as a percentage of total funding to health) to healthcare was practically unchanged in the last 30 years. Given the sustained financial crunch, the Brazilian government in 2016 decided to freeze the share of federal funding (at constant prices, 2017) till 2036 (Castro et al., 2019).

An analysis of federal expenditure before and after the austerity measures shows that the share of primary and hospital care remained unchanged with hospital care taking the greater share (Table 18). This means that service production in hospitals (both inpatient and outpatient) remains higher than in primary care, making the case for allocating greater funds to PHCs to make the system more efficient.

Table 18: Percentage distribution of SUS federal expenditure, 2014–2019

Component	2014	2019
Primary care	19	20
Hospital and outpatient care	44	44
Prophylactic and therapeutic support	10	10
Health and epidemiological surveillance	4	7
Other sub-function	23	19
Total (%)	100	100

Source: Araujo, Lobo, and Medici (2022)

The share of municipal and state expenditures remained unchanged in 2014–2019 (Figure 22). This poses questions for the financial sustainability of SUS and, consequently, for the survival of the healthcare model, given the fact that the federal government's budget is frozen (Massuda, et al., 2018).

Figure 22: Distribution of health expenditure (percentage of GHE) before and after austerity measures
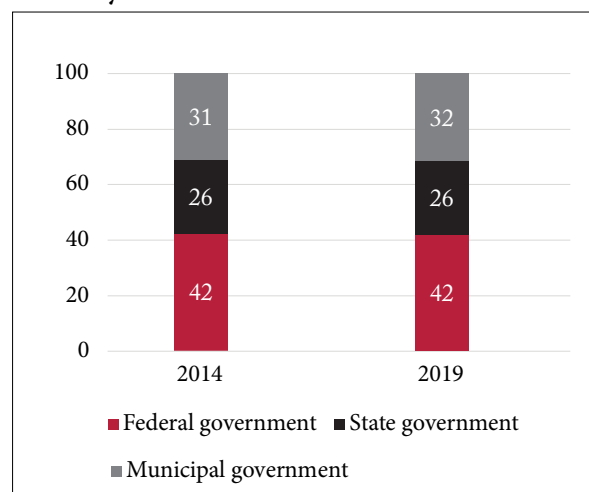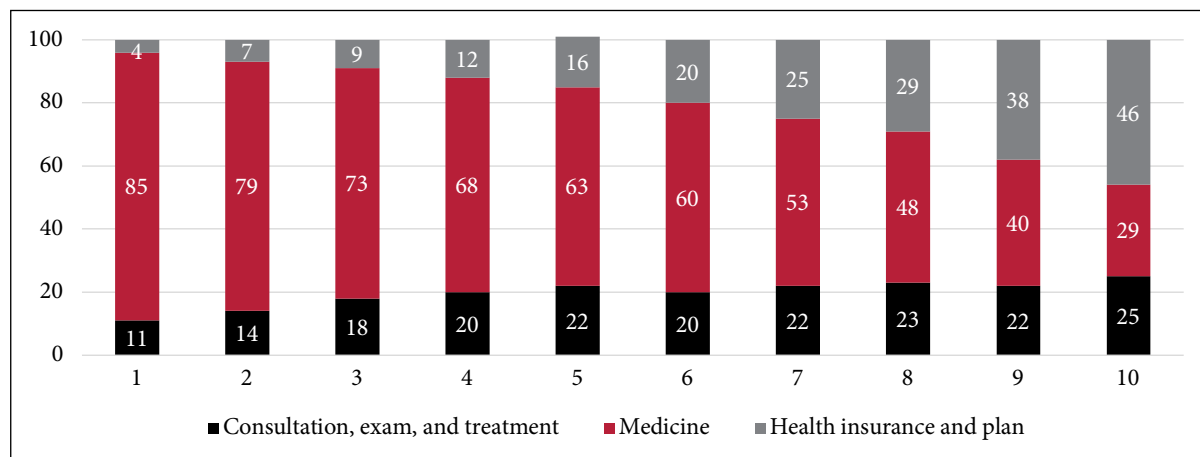

Source: Araujo, Lobo, and Medici (2022)

Achievements and challenges

SUS has managed to control out-of-pocket expenditure to below 30 percent in the last 20 years. One of the explanations for the comparatively lower out-of-pocket expenditure is the focus of SUS on outpatient care delivered either through PHCs or hospitals. However, healthcare expenditure forms a significant part of the total household consumption.

An estimate from the Household Budget Survey 2017–2018 suggests that healthcare expenditure accounts for 13 percent of total household consumption, which causes 33 percent of families to incur catastrophic healthcare expenditure. This further leads to the impoverishment of about 5 percent of the total population. The percentage of families incurring catastrophic expenditure is higher (37 percent) among poor households (Araujo, Lobo, & Medici, 2022).

Given the relatively low public expenditure on healthcare, households incur high out-of-pocket expenditures. This is primarily due to the high cost of medicines, especially for citizens belonging to low-income deciles (Figure 23). The underdeveloped domestic pharmaceutical market, and the greater dependence on imports and foreign companies for pharmaceutical products, have contributed to this (Muzaka, 2017).
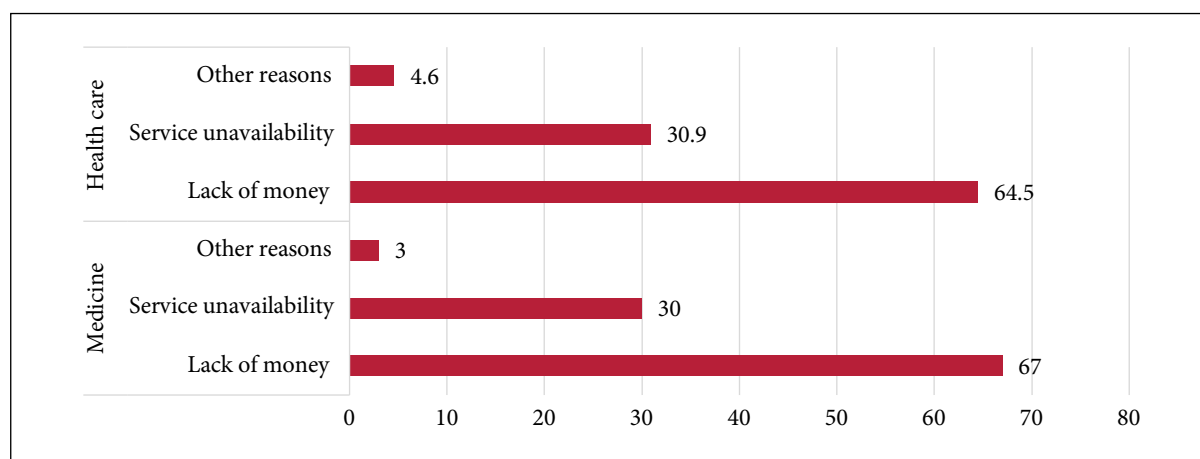
Figure 23: Health expenditure by income decile, 2018

Source: Araujo, Lobo, and Medici (2022)

Due to inequities in per capita expenditure, it was found that most patients find financial barriers as the main constraint in accessing healthcare services followed by service unavailability (Figure 24).

Figure 24: Reasons for the denial of healthcare services, 2018

*Source: Araujo, Lobo, and Medici (2022)*

4. Discussion

Prior to the health reforms, the Brazilian health system was characterised by centralised health financing and administration, a fragmented healthcare delivery system with a dominant private sector, and low prioritisation of preventive care, all of which combined to lead to inequities in access and outcomes. The SUS reform aimed to address prevailing inequities through decentralisation and the delegation of financial and administrative autonomy to municipalities; integration of healthcare activities under the stewardship of the MoH, thereby regulating the private sector; and a greater emphasis on primary care.

The shift in the organisation and governance of the health system to a decentralised model contributed to greater coverage of people living in poor regions (Table 11), greater accountability of PHCs by implementing P4P, and relatively greater equity in the distribution of health resources (Figure 25). This led to a considerable reduction in out-of-pocket expenditure (Figure 26) and equitable health outcomes across regions (Figure 27, 28). Brazil has been able to control out-of-pocket expenditure to below 30 percent and provide effective coverage to 75 percent of the population

with limited resources. It is noteworthy that public expenditure on health as a percentage of total health expenditure has not increased since 1990, but the coverage and quality of health services have improved significantly.

Figure 25: Hospital beds per 1,000 people
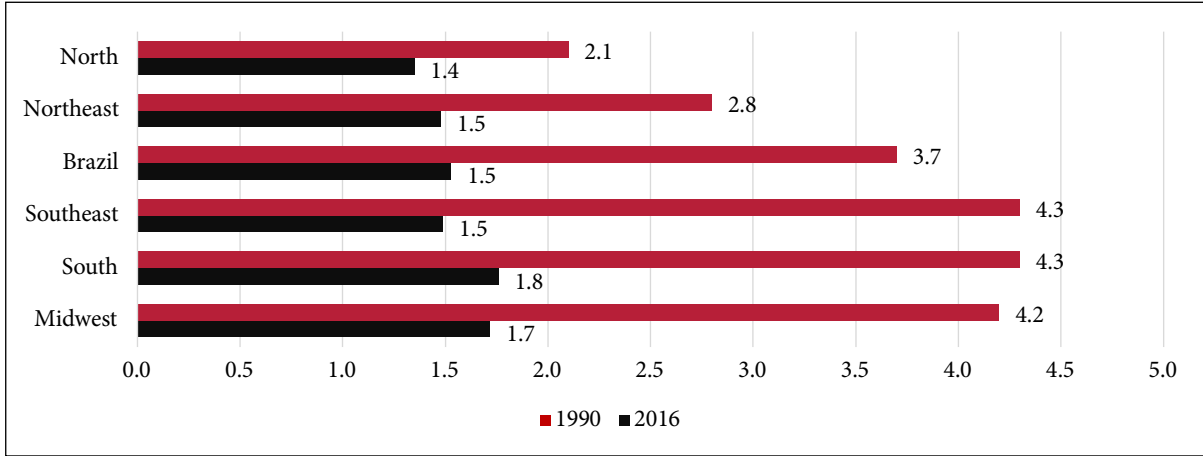
Source: Almeida et al. (2000); Santos et al. (2018)
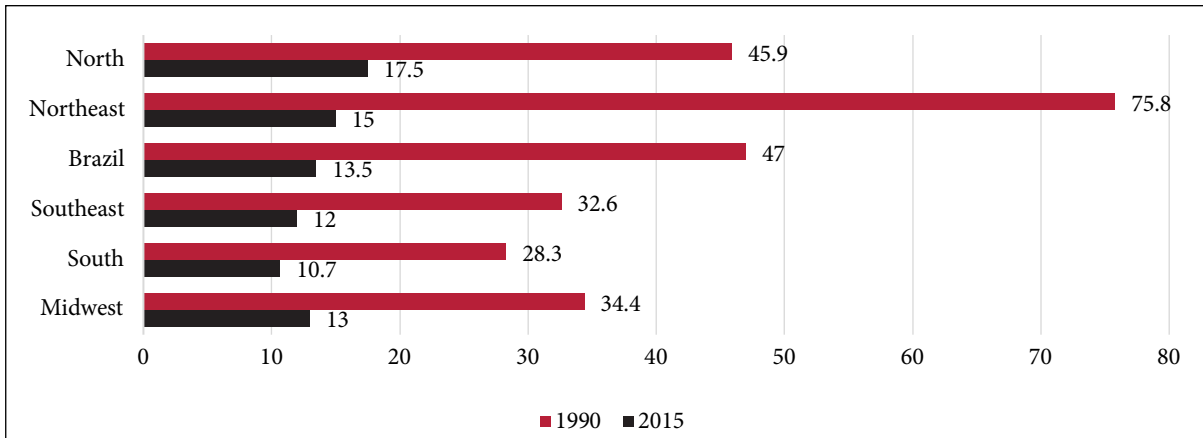
Figure 26: Distribution of out-of-pocket expenditure (% of total health expenditure)
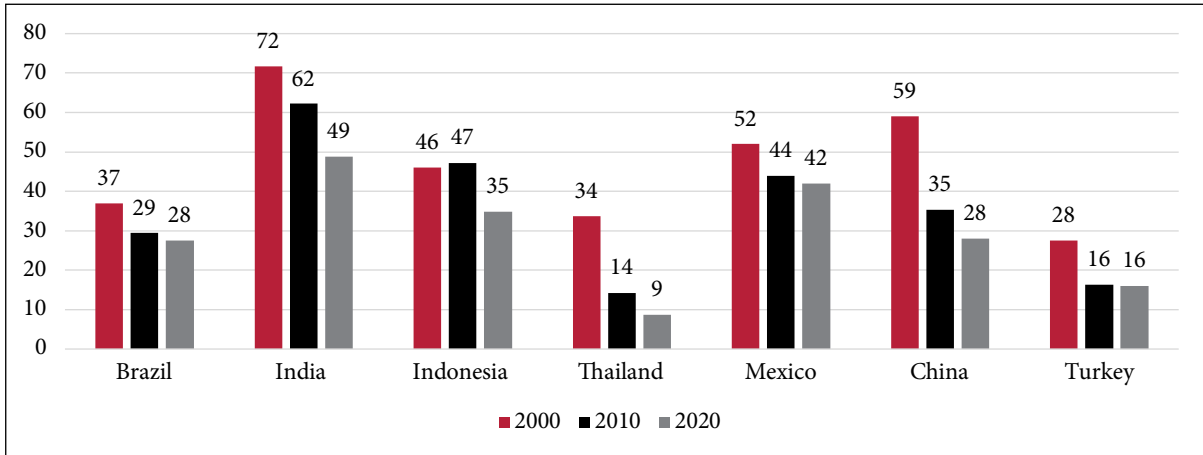
Source: World Bank (2022); PAHO (2018); Tatar et al. (2011); PAHO (2002); DGIS (2022); Mahendradhata et al. (2017); Jongudomsuk et al. (2015); Turkish Statistical Institute (2020)

Figure 27: Infant mortality rate (per 1,000 live births)

Source: Szwarcwald et al. (2020)

Figure 28: Maternal mortality ratio (per 100,000 live births)

Source: Leal et al. (2022)

Even though the SUS reform achieved significant progress in increasing effective coverage of the population, it failed to increase public expenditure on health to the level of countries having similar GDP per capita (Figure 29).

Figure 29: Distribution of public expenditure on health[10] (% of total health expenditure)
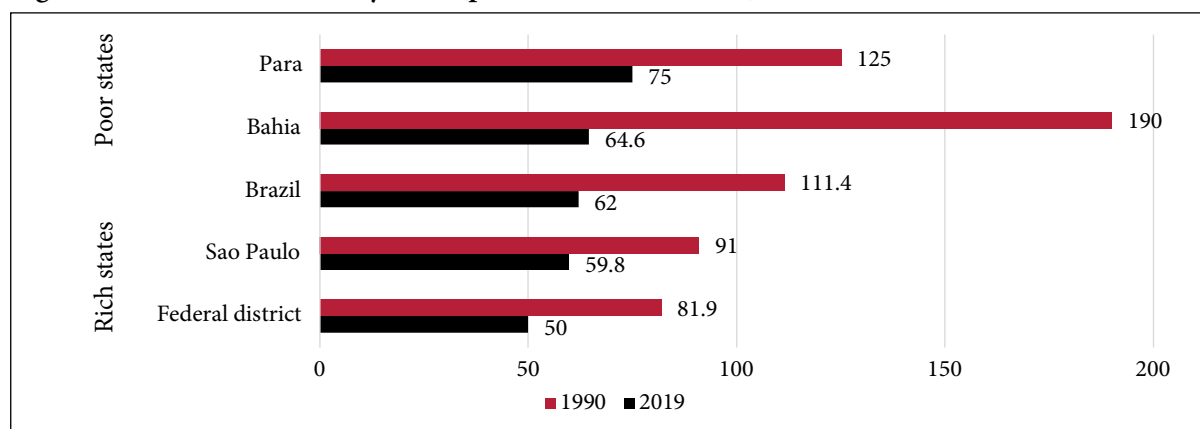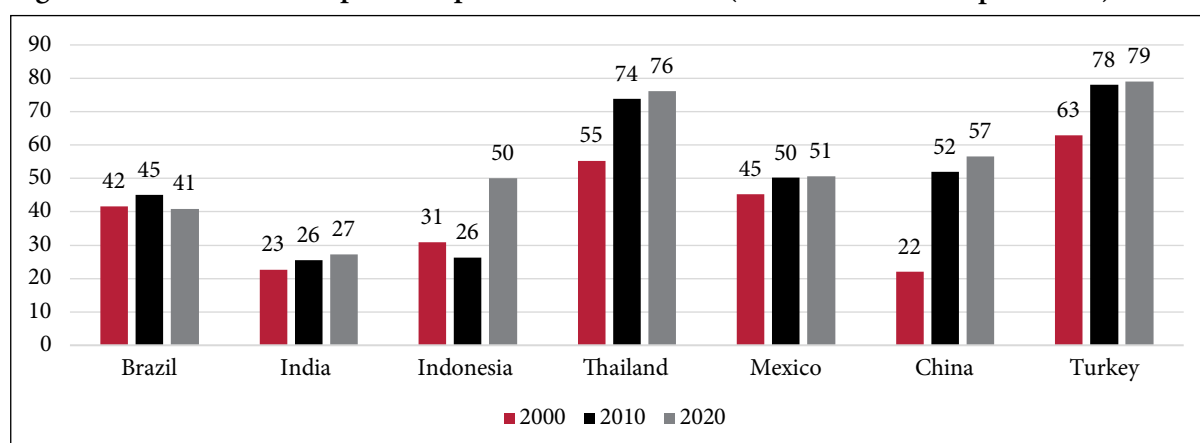

Source: World Bank (2022); PAHO (2018); Tatar et al. (2011); PAHO (2002); DGIS (2022); Mahendradhata et al. (2017); Jongudomsuk et al. (2015); Turkish Statistical Institute (2020)

Brazil has clearly made considerable progress towards universal health coverage since 1990, but gaps remain in terms of the greater utilisation of SUS-linked hospitals instead of PHCs and the persistent utilisation of private facilities (covering 25 percent of the population). Despite the challenges, the SUS reform has highlighted useful learning for developing countries in their advancement towards UHC.

Key learnings from Brazil's health reforms included the following:

1) One of the key aspects of the health reforms in Brazil was the implementation of comprehensive primary care following principles of universality—i.e., shifting the focus from hospital care to primary care. The FHS engaged community health workers to deliver services in remote locations, increasing health coverage, and, thereby, improving health outcomes. Linking PHCs to specialist services helps reduce hospitalisation costs, making the health system more efficient. A key learning of the SUS reform points to the ability of LMICs to advance towards UHC with a greater emphasis on primary healthcare.

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[10] Public expenditure data for India, Indonesia, and China is for the year 2018 and for Thailand and Brazil, 2017 and 2019, respectively. Countries are arranged according to GDP per capita (constant US$ 2015) 2020.

2) The performance-based payment system with targeted incentives to improve services in remote areas not only increased PHC coverage and enhanced quality but also addressed inequities in the distribution of health resources. However, due to the absence of a robust information system, timely disbursement of incentives to healthcare professionals at PHCs was not possible. Further, the failure of the state to abolish dual practice also affected the equitable distribution of doctors.

3) The absence of gatekeeping and low PHC investments in developed municipalities led to a continued preference for hospitals (especially for NCDs), despite the focus on PHCs in the SUS reform.

4) The SUS reforms successfully leveraged existing private facilities for secondary and tertiary care by linking payments to these hospitals to certain performance criteria. This not only enhanced competition between public and private hospitals, but it also ensured the regulation of the private sector (drugs and treatment costs), thereby controlling out-of-pocket expenditure.

    However, retaining line-item budgeting in a majority of public hospitals has not boosted their performance, resulting in people turning towards private hospitals. This has resulted in public funding being diverted to the private sector. Increasing the autonomy of public hospitals through global budgeting is a way forward with evidence suggesting the effectiveness of global budgeting in cost containment and ultimately enhancing the quality of service delivery (Forgia & Harding, 2009; Macêdo, et al., 2022).

5) Independent and professionally run regulatory bodies play a key role in controlling drugs, diagnosis, and treatment costs. Regulation of the private sector and protection of patient rights not just increased patient satisfaction but also ensured financial protection.

6) Gaps in human and physical resources are one of the major challenges of LMICs in delivering equitable health services. Brazil aims to fill the gaps by applying a three-pronged approach: i) building medical colleges and health facilities in rural areas; ii) hiring students from deprived regions by giving scholarships and stipends for higher education; and iii) incorporating a social accountability element in the medical curriculum to orient these students towards community medicine. This is a long-term vision but has the potential to address equity concerns.

7) A health network in the form of inter-municipality coordination is a new idea that is serving the needs of people living in less-developed municipalities. It is a useful idea for LMICs. However, the effectiveness of the approach is yet to be evaluated.

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Annex

Table 1a: UHC coverage index, 2017

Country	Population (in millions 2021)	Universal health coverage index	Service coverage index			
			Maternal and child health	Infectious disease	Chronic diseases	Health services capacity
Brazil	214	79	77	70	71	99
Mexico	130	76	83	71	72	80
Colombia	51	76	82	61	77	86
Argentina	46	76	88	64	67	89
Peru	33	77	75	69	83	81
Venezuela	29	74	76	67	79	75
Chile	19	70	92	74	38	94

Source: Araujo, Lobo, and Medici (2022)

Note: The range of the universal health coverage index is 0 to 100 where 0 represents no coverage and 100 is full coverage.

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