

 Health in Brazil 1

# The Brazilian health system: history, advances, and challenges

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Brazil is a country of continental dimensions with widespread regional and social inequalities. In this report, we examine the historical development and components of the Brazilian health system, focusing on the reform process during the past 40 years, including the creation of the Unified Health System. A defining characteristic of the contemporary health sector reform in Brazil is that it was driven by civil society rather than by governments, political parties, or international organisations. The advent of the Unified Health System increased access to health care for a substantial proportion of the Brazilian population, at a time when the system was becoming increasingly privatised. Much is still to be done if universal health care is to be achieved. Over the past 20 years, there have been other advances, including investments in human resources, science and technology, and primary care, and a substantial decentralisation process, widespread social participation, and growing public awareness of a right to health care. If the Brazilian health system is to overcome the challenges with which it is presently faced, strengthened political support is needed so that financing can be restructured and the roles of both the public and private sector can be redefined.

## Introduction

In this report, we examine the organisation, historical development, and present state of the Brazilian health system. We review published studies and original data from official sources to provide an overview of the Brazilian health system and outline future challenges.

Brazil is a federative republic that covers 8.5 million km<sup>2</sup>—or 47% of South America. With an estimated population of 190 732 694 in 2010,<sup>1</sup> Brazil is the world's fifth most populous country. Its political system is composed of several political parties and three levels of autonomous government—federal government, 26 states and a federal district, and 5563 municipalities. Brazil is governed by means of an independent judiciary, an executive branch led by the president, and a bicameral legislature. Brazil was a colony of Portugal from the year 1500 onwards and, although it gained political independence in 1822, it did not become a republic until 1889. Slavery was abolished in 1888. The Brazilian population is multi-ethnic; in 2008, about half the population self-classified their race or skin colour as brown (43.8%) or black (6.8%), and 0.6% thought of themselves as indigenous to Brazil.<sup>2</sup> In the 20th century, Brazil underwent rapid industrialisation during a time of political instability, military takeovers, and authoritarian governments, with brief periods of democratic rule—Brazil has had its longest period of democracy during the past 25 years.

Health sector reform in Brazil was driven by civil society rather than by government, political parties, or international organisations. The Unified Health System (*Sistema Único de Saúde*; SUS), instituted by the 1988 constitution, is based on the principle of health as a citizen's right and the state's duty.

## Brazil—a brief overview

Brazil has undergone major political, economic, demographic, and social changes in the past 40 years.

## Key messages

- Since 1988, Brazil has developed a dynamic, complex health system (the Unified Health System; SUS), which is based on the principles of health as a citizen's right and the state's duty. The SUS aims to provide comprehensive, universal preventive and curative care through decentralised management and provision of health services, and promotes community participation at all administrative levels.
- The Brazilian Health Sector Reform occurred at the same time as democratisation, and was spearheaded by health professionals and individuals in civil society movements and organisations.
- Implementation of the SUS has been complicated by state support for the private sector, the concentration of health services in more developed regions, and chronic underfunding.
- Despite these limitations, the SUS has managed to vastly improve access to primary and emergency care, reach universal coverage of vaccination and prenatal care, and invest heavily in the expansion of human resources and technology, including major efforts to produce the country's most essential pharmaceutical needs.
- Future challenges for the SUS include reforming its financial structure to ensure universality, equity, and long term sustainability, renegotiating public and private roles, reshaping the model of care to cater to Brazil's rapid demographic and epidemiological changes, and assuring quality of care and the safety of patients.
- Ultimately, the challenges facing the SUS are political because they cannot be resolved in the technical sphere but through only the concerted efforts of individuals and the society.

In 1970, under the military regime, Brazil's economic growth was among the highest in the world, but improvements in quality of life disproportionately benefited the most privileged populations. Although democracy was restored in the mid-1980s, during a period of economic instability, resumption of economic growth and improvement of social protection did not happen until the 21st century.

The country is divided into five geographical regions (north, northeast, centre-west, southeast, and south; figure 1) with differing demographic, economic, social, cultural, and health conditions, and widespread internal inequalities. For example, the southeast region covers only 11% of Brazil's territory, but accounts for 43% of the population and 56% of gross domestic product. The north region, which contains most of the Amazon rainforest, has the country's lowest population density (3.9 people per km<sup>2</sup>) and is the second poorest region, after the northeast region.

Between 1970 and 2000, Brazil underwent a demographic transition; the proportion of the population older than 60 years (10% in 2009) doubled and urbanisation increased from 55.9% to 80%.<sup>1</sup> Fertility rates decreased (5.8 in 1970 to 1.9 in 2008), as did infant mortality (114 per 1000 livebirths in 1970 to 19.3 per 1000 livebirths in 2007). As a result, life expectancy at birth increased by nearly 40%, to 72.8 years in 2008 (table 1).

Unemployment in 2007 was low at 8.2%, but many (43.8%) workers were employed in the informal sector—56% of those employed had social security coverage. By 2020, the old-age dependency ratio is expected to be 68 people older than 60 years to every 100 children and adolescents,<sup>9</sup> and the proportion of the population of age to enter the labour market is expected to be larger than ever before.<sup>10</sup> School attendance has increased since 1990, and illiteracy rates have decreased from 33.7% in 1970 to 10.0% in 2008 (table 1).

Between 1991 and 2008, Brazil's gross domestic product doubled and its Gini coefficient, although among the highest in the world, decreased by 15% from 0.637 to 0.547.<sup>2</sup> The poverty index decreased from 68% in 1970 to 31% in 2008—this improvement can be attributed to a combination of social policies, including the social security system, the *Bolsa Família* conditional cash transfer programme (which, in 2008, distributed R\$13 billion [about US\$7.2 billion] among 10.5 million families),<sup>11</sup> and increases in the legal minimum wage.

Living conditions have also changed substantially. In 1970, only 33% of households had indoor water, 17% had access to sewerage, and less than half had electricity (table 2). By 2007, 93% of households had indoor water, 60% had access to sewerage, and most had access to electricity. Ownership of consumer goods has also increased; in 2008, more than 90% of households had a refrigerator and television, 75% had mobile phones, 32% had a personal computer, and 80% of Brazilians who were 15 years or older reported use of broadband internet.<sup>1</sup>

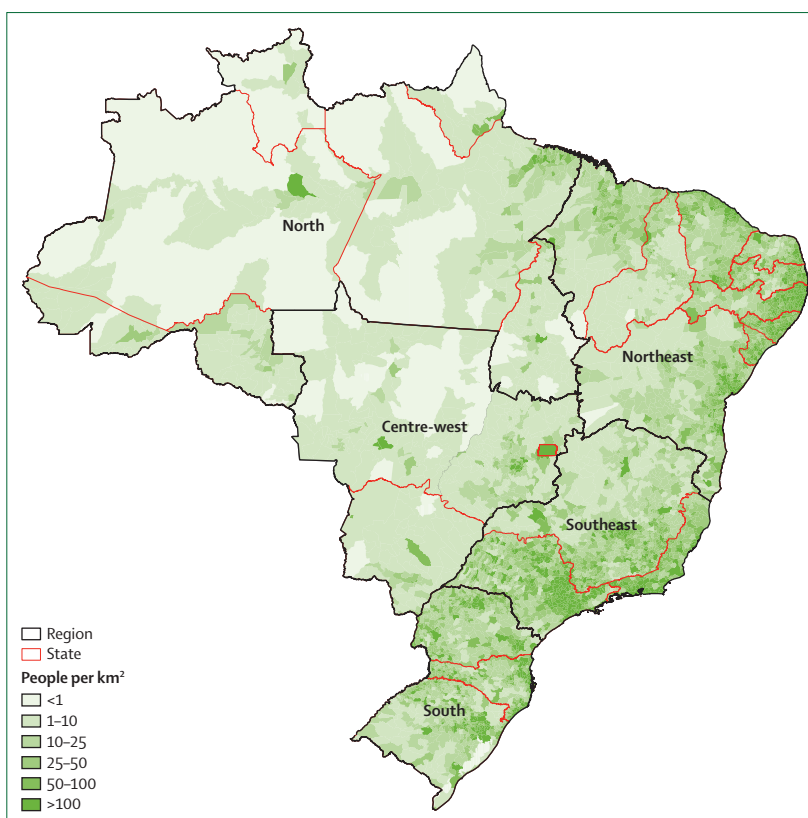


Figure 1: Populations densities in the five regions of Brazil

Such changes in living conditions have had an effect on Brazilians' health and health behaviour. The prevalence of overweight and obesity is increasing; 47.3% of men in state capitals report being overweight.<sup>13,14</sup> About a third of families report that they do not have enough food to eat.<sup>15</sup> Although only 19% of adults in state capitals eat enough fruit and vegetables (ie, at least five portions of fruit or fruit juices and vegetables per day, five or more days per week), the quality of peoples' diet seems to be improving with time.<sup>16</sup> Physical activity is low in state capitals,<sup>2</sup> but tobacco use has decreased as a result of the National Tobacco Control Programme—in 2008, 17.2% of the population smoked, compared with 34.5% in 1989, when the programme began. Alcohol misuse is another challenge; 17.6% of people aged 15 years or older report binge drinking.<sup>9</sup>

Changes in mortality and morbidity rates are related to these demographic, epidemiological, and nutritional transitions. Diseases of the circulatory system are the leading cause of death, followed by cancer and external causes (largely homicides and traffic accidents).<sup>17</sup> Chronic diseases are the biggest contributor to the burden of disease, and communicable diseases, although decreasing with time, still affect a substantial proportion of the population. An estimated 40–50% of Brazilians older than 40 years are hypertensive and 6 million are diabetic,<sup>9</sup> representing an enormous

	1970	1980	1990	2000	2010
<b>Demographics</b>					
Population	95 993 400 (1971)	121 611 375	147 593 859	170 143 121	190 732 694
<b>Age</b>					
0-4 years (n [%])	13 811 806 (14.4%)	16 423 700 (13.5%)	16 521 114 (11.2%; 1991)	16 375 728 (9.6%)	15 687 927 (8.2%)
60-69 years (n [%])	3 007 637 (3.1%)	4 474 511 (3.7%)	6 412 918 (4.3; 1991)	8 182 035 (4.8%)	10 625 402 (5.5%)
≥70 years (n [%])	1 708 571 (1.8%)	2 741 506 (2.3%)	4 309 787 (2.9%; 1991)	6 353 994 (3.7%)	8 802 684 (4.6%)
Infant mortality (n per 1000 livebirths)	113.90 (1975)	69.10	45.22	27.4 <sup>3</sup>	19 (2007) <sup>4</sup>
Fertility rate	5.8	4.35	2.85 (1991)	2.38	1.86 (2008)
Life expectancy (years)	52.3	62.6	66.6	70.4	72.8 (2008)
Men (years)	..	59.7	63.1	66.71	68.7
Women (years)	..	65.7	70.9	74.35	76.4
Life expectancy at age >60 years (years)	..	76.4	78.3	80.4	81.01 <sup>3</sup>
Men (years)	..	75.2	77.4	78.3	79.3
Women (years)	..	77.6	79.9	81.7	82.3
Dependency rate*	88.31	73.18	72.5 (1991) <sup>3</sup>	61.7 <sup>3</sup>	47.9 (2008)
Sex ratio (men per 100 women)	98.9	98.7	97.5 (1991)	96.9	96.6 <sup>2</sup> (2007)
Urban population	55.9%	67.5%	75.5%	81.2%	83.8%
<b>Self-reported race or skin colour<sup>1</sup></b>					
White	61.1% (1960)	54.2%	51.6% (1991)	53.7%	48.3% (2008) <sup>2</sup>
Brown	29.4% (1960)	38.8%	42.4%	38.5%	43.8% (2008) <sup>2</sup>
Black	8.7% (1960)	5.9%	5.0%	6.2%	6.8% (2008) <sup>2</sup>
Indigenous	..	..	0.2%	0.4%	0.6% (2008) <sup>2</sup>
Yellow	0.7% (1960)	0.6%	0.4%	0.4%	0.3% (2008) <sup>2</sup>
Female-headed households (% of families)	13.0 <sup>3</sup> %	15.4% (1977)	22.7% (1993)	27.34% (2001)	33.0% (2007)
<b>Formal education</b>					
≥7 years	19.2% (1976)	..	19.6%	37.5%	47.0% (2008) <sup>2</sup>
≥10 years	16.7%	..	17.8%	21.7%	30.1%
Illiteracy in people ≥15 years old (%)	33.6	25.5	20.1	13.6	10
Functional illiteracy†	..	..	36.9 (1992)	27.3 (2001)	20.3 (2009)
<b>Work</b>					
Unemployment rate in individuals >10 years old (%)	4.2% (1968) <sup>5</sup>	3.1% <sup>5</sup>	9.9% <sup>5</sup>	9.4% (2001) <sup>5</sup>	8.2% (2007) <sup>5</sup>
Proportion of individuals who work in the informal sector (%)	45.6% (1976)	50.2% (1982)	39.9% (1992) <sup>5</sup>	42.5% (1999)	43.8% (2007) <sup>5</sup>
<b>Income</b>					
<b>Distribution of total income (%)</b>					
Poorest income quintile	2.4% (1977)	2.6% (1981)	2.1%	2.3%	2.9% (2007)
Richest income quintile	66.6%	63.1%	65.6%	63.8%	59.6%
<b>Mean monthly earnings</b>					
Population >10 years old who earn half of the minimum wage or less (%)	7.8% (1976)	11.0% (1982)	6.3%	6.7% (2001)	9.0% (2008)
Population >10 years old who earn more than five times the minimum wage (%)	5.8%	4.3%	12.7%	13.0%	8.7%
Population >10 years old with no income (%)	49.0%	44.5%	40.4%	38.5%	31.1%
Gini index	0.57 <sup>4</sup>	0.59 <sup>4</sup>	0.64 (1991) <sup>5</sup>	0.56 (2001)	0.55 (2008)
<b>Bolsa Familia (conditional cash transfer)</b>					
Beneficiary families (n)	..	..	..	10 945 505 (2006) <sup>5</sup>	10 536 662 (2008) <sup>5</sup>
Total value of benefits (R\$ per month)	..	..	..	685 435 000	904 079 028
<b>Macroeconomic indicators</b>					
Tax burden (% of gross national product)	25.98% <sup>5</sup>	24.41% <sup>5</sup>	29.60% <sup>5</sup>	30.36% <sup>5</sup>	33.83% (2005) <sup>5</sup>

(Continues on next page)

	1970	1980	1990	2000	2010
(Continued from previous page)					
Gross domestic product per head (parity purchasing power; US\$) <sup>6</sup>	2061.56 (1975)	3671.14	5282.68	7366.20	10 465.8 (2008)
Poverty rate (%) <sup>‡5</sup>	67.9%	39.4%	45.4%	34.0%	30.7%
Health spending					
Health spending per head (parity purchasing power; US\$)	..	..	473 (1995) <sup>6</sup>	572 <sup>5</sup>	771.56 (2008) <sup>7</sup>
Proportion of gross domestic product spent on health	..	..	6.7% <sup>8</sup>	7.2% <sup>8</sup>	8.4% (2007) <sup>8</sup>
Proportion of health spending in the private sector	..	..	56.9% <sup>7</sup>	59.97% <sup>7</sup>	57.14% (2007) <sup>7</sup>
Proportion of private spending on health plans	..	..	32.0% <sup>7</sup>	33.9% <sup>7</sup>	29.8% (2008)
Federal public spending (credits liquidated; R\$)	..	..	..	26 027 957 018 (2002) <sup>7</sup>	44 303 497 000 (2007) <sup>7</sup>
Primary care	..	..	..	12.0% <sup>7</sup>	14.3% <sup>7</sup>
Outpatient and hospital care	..	..	..	49.1% <sup>7</sup>	52.0% <sup>7</sup>
Prophylactic and therapeutic support	..	..	..	1.6% <sup>7</sup>	9.7% <sup>7</sup>

Data are from reference 1, unless otherwise stated. The year in which data is from is given in parentheses if not from the year in the column heading. ..=data not available. \* =number of people aged 65 years and older to every 100 children and adolescents. †=individuals aged 15 years or older with less than 4 years of formal education. ‡=proportion of families with a per person income of less than half the minimum wage.

**Table 1: Demographic, social, and macroeconomic indicators in Brazil, 1970–2010**

	1970	1980	1990	2000	2010
Households with piped water	32.84%	79.6% (1981)	90.67%	91.45% (2001)	93.10% (2007)
Households with sewerage	17.46%	39.81% (1981)	47.95% (1992)	52.8%	59.5%
Households with refuse collection	..	..	64.48%	83.2%	88.4%
Households with electricity	48.6%	67.4%	88.8% (1992)	96.0%	98.5%
Households consuming firewood (10 <sup>3</sup> thermoelectric power units) <sup>12</sup>	19 070	14 974	7960	6325	5713

Data are from reference 1, unless otherwise stated. The year in which data is from is given in parentheses if not from the year in the column heading. ..=data not available.

**Table 2: Material goods, 1970–2010**

challenge to a health system organised to provide predominantly acute care (table 3).<sup>22</sup>

Geographical and social inequalities in morbidity and mortality rates exist. In 2006, the northeast region had an infant mortality rate 2.24 times higher than that of the south region, although this disparity has decreased.<sup>4</sup> In Brazil, people who identify their race or skin colour as brown or black tend to be from lower income and educational groups, and inequalities in some health outcomes (such as the prevalence of hypertension) exist between people of different race or skin colour. However, for other indicators, such as self-assessed health, outcomes are much the same after adjustment for socioeconomic status.<sup>23–25</sup> Although race and social class are also related in other countries, the means by which racial relations in Brazil affect health are distinct.<sup>26</sup>

### Background to the Brazilian health system

The Brazilian health system consists of a variety of public and private organisations that were set up in different historical periods (figure 2). In the early 1900s, public

health campaigns, undertaken in an almost military fashion, were used to implement public health activities. The authoritarian nature of these campaigns brought about opposition from parts of the population and some politicians and military leaders. Such opposition led to the vaccine revolt in 1904, a period of unrest in reaction to a compulsory smallpox vaccination campaign sanctioned by Oswaldo Cruz, the Director General of public health at the time (figure 3).<sup>24,26</sup> The Brazilian state's model for intervention in social policies dates from the 1920s and 1930s, when an individual's social and civil rights were related to their position in the labour market.<sup>26</sup>

Brazil's social protection system expanded during the Government of President Vargas (1930–45) and the military (1964–84). Decision-making and management processes were done without public involvement and were centralised in large bureaucracies.<sup>33</sup> The social protection system was fragmented and unequal.<sup>34</sup> The health system consisted of an underfunded Ministry of Health and the social security system, which provided medical care through the retirement and pension institutes, delivered on the basis of occupational

	1970	1980	1990	2000	2010
<b>Immunisation coverage by the SUS</b>					
BCG	..	..	88.29% (1994)	111.74%*	105.86%* (2009)
<i>Haemophilus influenzae</i> type b (Hib)	..	..	..	87.85%	0.64%
Influenza	..	..	..	67.46%	82.77%
Hepatitis B (HepB)	..	..	8.85%	91.08%	97.88%
Measles	..	..	71.35%	105.35%*	..
Oral poliomyelitis (VOP)	..	..	58.23%	101.44%*	100.76%*
Diphtheria, pertussis, tetanus (DPT)	..	..	64.75%	94.71%	0.08%
Measles, mumps, and rubella (MMR)	..	..	..	77.5%	101.64%*
Measles and rubella	..	..	..	..	0.13%
Oral human rotavirus (RR)	..	..	..	..	84.26%
Tetavalent DPT-HepB	..	..	..	..	99.34%
Influenza A H1N1	..	..	..	..	37.0% (2010)
<b>Private health-care plans</b>					
Coverage (%) <sup>2</sup>	..	..	24.4% (1998)	24.4% (2003)	25.9% (2008)
People covered (n) <sup>2</sup>	..	..	38 680 406 (1998)	45 035 243 (2003)	49 186 989 (2008)
<b>Family Health Programme coverage</b>					
Population served by community health workers	..	..	29.6% (1998) <sup>3</sup>	42.8% <sup>3</sup>	60.4% (2008) <sup>3</sup>
Population served by family health teams	..	..	6.6% <sup>3</sup>	17.4%	49.5% <sup>3</sup>
Population served oral health teams	..	..	0% <sup>3</sup>	0% <sup>3</sup>	45.3% <sup>3</sup>
<b>Hospital admissions (SUS)</b>					
Brazil	5 582 942 (1968) <sup>18</sup>	13 070 832 (1982) <sup>19</sup>	12 646 200 (1995) <sup>20</sup>	11 937 323 <sup>20</sup>	11 109 834 (2009) <sup>20</sup>
North region <sup>20</sup>	..	..	839 013	914 104	993 575
Northeast region <sup>20</sup>	..	..	3 796 425	3 601 780	3 132 711
Centre-west region <sup>20</sup>	..	..	846 231	901 731	880 832
Southeast region <sup>20</sup>	..	..	5 125 620	4 536 395	4 215 241
South region <sup>20</sup>	..	..	2 038 911	1 983 313	1 887 475
<b>SUS hospital admissions by specialty</b>					
Clinical (n[%]) <sup>20</sup>	..	7 422 199 (56.8%; 1982)	4 736 535 (37.5%; 1995)	4 089 745 (34.3%)	3 967 626 (35.7%; 2009)
Surgery (n[%]) <sup>20</sup>	..	1 971 851 (15.1%)	2 485 977 (19.7%)	2 747 254 (23.0%)	3 198 391 (28.8%)
Obstetrics (n[%]) <sup>20</sup>	..	3 234 619 (24.7%)	3 271 479 (25.9%)	2 871 045 (24.1%)	2 163 655 (19.5%)
Paediatrics (n[%]) <sup>20</sup>	..	..	1 630 866 (12.9%)	1 762 573 (14.8%)	1 429 563 (12.9%)
Psychiatry (n[%]) <sup>20</sup>	..	419 775 (3.2%)	436 319 (3.5%)	394 889 (3.3%)	229 636 (2.1%)
Psychiatry (day-hospital; n[%]) <sup>20</sup>	..	..	6 575 (0.1%)	19 893 (0.2%)	22 178 2764 (0.2%)
Geriatrics (day-hospital; n[%]) <sup>20</sup>	..	..	..	..	211 (0.005%)
Other (n[%]) <sup>20</sup>	..	..	78 449 (0.6)	51 924 (0.4%)	..
Hospital admissions (per 100 population) <sup>2</sup>	..	7.2 (1981) <sup>18</sup>	6.9 (1998)	7.0 (2003)	7.0 (2008)
Admission rates for individuals with private health plans (%) <sup>2</sup>	..	..	8.0%	8.3%	8.2%
SUS outpatient procedures (n) <sup>20</sup>	..	178 751 174 <sup>19</sup>	1 230 880 494 (1995) <sup>20</sup>	1 583 844 132 <sup>20</sup>	3 230 759 585 (2009) <sup>20</sup>
Public (n[% of total]) <sup>20</sup>	..	..	914 060 997 (74.3%)	1 281 403 329 (80.9%)	2 861 269 985 (88.6%)
Municipal (n[% of public]) <sup>20</sup>	..	..	704 741 029 (77.1%)	1 058 439 150 (82.6%)	1 974 276 290 (69.0%)
Private (n[% of total]) <sup>20</sup>	..	..	316 819 497 (25.7%)	302 440 794 (19.1%)	369 489 627 (11.4%)
<b>Level of complexity</b>					
Primary care (n[%])	..	..	961 830 090 (78.1) <sup>3</sup>	990 243 733 (63.0) <sup>3</sup>	1 592 995 777 (49.3) <sup>21</sup>
Medium complexity (n[%]) <sup>21</sup>	..	..	..	..	939 701 073 (29.1)
High complexity (n[%]) <sup>21</sup>	..	..	..	..	662 735 573 (20.5)
Other <sup>21</sup>	..	..	..	..	35 327 162

Data are from reference 1, unless otherwise stated. The year in which data is from is given in parentheses if not from the year in the column heading. --=data not available. \* Estimates greater than 100% are a result of inconsistencies in population estimates.

**Table 3: Coverage and use of health care service, 1970–2010**

categories (ie, bankers, railroad workers, etc), each with different services and levels of coverage.<sup>26</sup> Individuals with casual employment had an inadequate supply of public services, philanthropic care, and out-of-pocket private health-care services.<sup>34</sup> After the military takeover in 1964, government reforms made expansion of the

predominantly private health care system possible, mainly in major urban centres. Rapid expansion of coverage followed, which included the extension of social security to rural workers (figure 2).

Between 1970 and 1974, money from the federal budget was made available to reform and build private hospitals;<sup>26</sup>

	Macroeconomic and socioeconomic context	Political context	Health System	Key health challenges
<b>Portuguese colonialism (1500–1822)<sup>24</sup></b>	Exploitation of raw materials and trade monopoly by Portugal	Political and cultural control from Portugal	16th century: <ul style="list-style-type: none"> <li>Hospitals of the Santa Casa de Misericórdia in Santos, São Paulo, Bahia, Rio de Janeiro, Belém, and Olinda were set up</li> <li>Incipient health-sector organisation</li> </ul>	Pestilential diseases and the provision of health care for the general public
<b>Imperial phase (1822–89)<sup>25</sup></b>	Opening of the ports (1808), emergence of modern capitalism, and onset of industrialisation	Political centralism and political boss system, which gave large land owners political control in provinces and localities	<ul style="list-style-type: none"> <li>Health-related structures organised as sanitary police</li> <li>Public health assigned to municipalities</li> <li>First institutions for sanitary control of ports and epidemics established during reforms (1828 and 1850)</li> </ul>	Pestilential diseases and priority for health surveillance (ports and commerce)
<b>Old Republic (1889–1930)<sup>26</sup></b>	Agro-exporting economy (commercial capital), coffee crisis, and poor hygiene in ports	Liberal-oligarchic State, military revolts, and the emergence of social issues	<ul style="list-style-type: none"> <li>General Directorate of Public Health (DGSP; 1897)</li> <li>Reform of DGSP competences (Oswaldo Cruz; 1907)</li> <li>Retirement and Pension Funds (Eloy Chaves Law; 1923)</li> <li>Incipient form of Social Security health care</li> <li>Dichotomy between public health and social security</li> </ul>	Pestilential diseases (yellow fever, smallpox, the plague) and widespread disease (eg, tuberculosis, syphilis, rural endemic diseases)
<b>Vargas dictatorship (1930–45)<sup>27</sup></b>	Industrialisation, but agrarian structure maintained	(Estado Novo) Authoritarian state between 1937 and 1938 identified with Nazi-fascism	<ul style="list-style-type: none"> <li>Public health institutionalised through the Ministry of Education and public health</li> <li>Social security and occupational health institutionalised through the Ministry of labour, industry, and commerce</li> <li>Public health campaigns against yellow fever and tuberculosis</li> <li>Pension institutes extend insurance security to most urban workers (1933–38)</li> </ul>	Predominantly rural endemic diseases (eg, Chagas disease, schistosomiasis, ancylostomiasis, malaria), tuberculosis, syphilis, and nutritional deficiencies
<b>Democratic instability (1945–64)<sup>28</sup></b>	Import substitution, rapid urbanisation, immigration, advent of the automobile industry, penetration by international capital	Liberal, populist governments	<ul style="list-style-type: none"> <li>First Ministry of Health (1953)</li> <li>Laws unified social security rights of urban workers (1960)</li> <li>Expansion of hospital care</li> <li>Emergence of private business sector in health</li> </ul>	Emergence of modern diseases (eg, chronic degenerative diseases, labour and traffic accidents)
<b>Military dictatorship (1964–85)<sup>29</sup></b>	<p>Internationalisation of the economy</p> <p>Economic miracle (1968–73)</p> <p>Economic miracle ends</p> <p>Penetration by capitalism in rural areas and in services</p>	<ul style="list-style-type: none"> <li>Military takeover, dictatorship (1964)</li> <li>Administrative reform (1966)</li> <li>Political crisis (1974 elections)</li> </ul> <p>Slow, gradual, and restricted political easing (1974–79)</p> <ul style="list-style-type: none"> <li>Liberalisation (1976)—<i>Centro Brasileiro de Estudos de Saúde</i> set up; social movements</li> <li>Symposium in congress (1979)</li> <li>Political transition (from 1974–84)</li> </ul> <p>Brazilian Association of Post-Graduate Collective Health set up</p>	<p>Social security organisations (IAPs) unified in the National Social Security Institute (INPS), privatised medical care model dominates, and capitalisation of health sector (1966)</p> <ul style="list-style-type: none"> <li>Capitalisation of medicine by the social security system</li> <li>Health system in crisis</li> <li>Primary Health Care (PHC) programmes for rural and small (&lt;20 000 people) populations</li> <li>Crisis in social security</li> <li>National Social Security Healthcare Institute (INAMPS; 1977);</li> <li>Health system centralisation, institutional fragmentation, private sector advantage</li> <li>INAMPS fund states and municipalities to expand coverage</li> </ul>	<p>Predominantly modern diseases (eg, chronic degenerative diseases, labour and traffic accidents)</p> <p>Rural endemic diseases persist and become more prevalent in urban areas</p> <p>Infectious and parasitic diseases in the Northeast, Northwest, and midwest regions</p>
<b>Democratic transition (1985–88)<sup>30</sup></b>	Recession interrupted, social debt acknowledged, and plans for economic stabilisation	<ul style="list-style-type: none"> <li>Start of New Republic (1985)</li> <li>Health on the political agenda</li> <li>8th National Health Conference;</li> <li>Health Sector Reform emerges</li> <li>National Constituent Assembly</li> <li>New constitution (1988)</li> </ul>	<ul style="list-style-type: none"> <li>INAMPS continue funding for states and municipalities</li> <li>AIS enhanced</li> <li>Unified and decentralised health systems (1987)</li> <li>Containment of privatisation policies</li> <li>New channels for public participation</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in infant mortality and immunisation-preventable diseases</li> <li>Cardiovascular diseases and cancers persist</li> <li>Increases in violent deaths and AIDS-related deaths</li> <li>Dengue fever epidemics</li> </ul>

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<p><b>Democracy (1988–2010)<sup>31</sup></b></p>	<p>Economic crisis (hyperinflation)</p> <p>Macroeconomic adjustment (Real Plan; 1994)</p> <p>Economic stability, income begins to recover, cyclic movement (highs and lows), inequalities persist, and monetarist policy continues</p>	<p>President Fernando Collor de Mello elected and impeached, social imbalance</p> <p>Remaining presidential term (1993–94) overseen by Vice-President Itamar Franco</p> <p>Governments of Fernando Henrique Cardoso (1995–98 and 1999–2002)—social-democratic party</p> <p>State reform (1995)</p> <p>Governments of Luiz Inácio Lula da Silva (2003–06 and 2007–10)—the Workers Party<sup>32</sup></p>	<ul style="list-style-type: none"> <li>• Creation of the SUS</li> <li>• Decentralisation of the health system</li> </ul> <p>9th National Health Conference</p> <ul style="list-style-type: none"> <li>• INAMPS repealed (1993)</li> <li>• Family Health Programme set up (1994)</li> <li>• Crisis in funding and creation of Provisional Contribution on Financial Transactions (1996)</li> <li>• Free treatment for HIV/AIDS through the SUS</li> <li>• Per head PHC funding (1998)</li> <li>• 10th and 11th National Health Conferences</li> <li>• Health-care operating norms and regionalisation established</li> <li>• Regulation of the private health plans</li> <li>• National Health Surveillance Agency set up (1999)</li> <li>• Supplementary Health Care Agency set up to regulate and oversee private health plans (2000)</li> <li>• The generic drugs law passed</li> <li>• The Arouca Law instituted indigenous health care as part of the SUS</li> <li>• Constitutional amendment addressed the instability in SUS financing and defined the duties of the Union, states, and municipalities (2000)</li> <li>• Psychiatric reform law passed (2001)</li> <li>• Expansion and consolidation of PHC</li> <li>• Mobile emergency care (ambulance) system set up (2003)</li> <li>• Pact for Health established (Pact in Defence of the SUS, Management Pact, the Pact for Life; 2006)</li> <li>• National Primary Care policy (2006)</li> <li>• Health Promotion (2006)</li> <li>• 12th and 13th National Health Conferences</li> <li>• National Commission on Social Determinants of Health and National Oral Health Policy (Brasil Sorridente; 2006)</li> <li>• 24-h emergency care units set up in municipalities with populations &gt;100 000 (2008)</li> <li>• Multi-professional Family Health Support Teams set up to support the Family Health Programme (2008)</li> </ul>	<p>Cholera and dengue fever epidemics, mortality from external causes (mostly homicides and traffic accidents)</p> <p>Cardiovascular disease most common cause of death, followed by external causes and cancers</p> <p>Decrease in infant mortality, no change in prevalence of tuberculosis, stabilisation in prevalence of AIDS-rates illness, increase in prevalence of dengue fever, and increase in incidence of visceral leishmaniasis and malaria</p> <p>Life expectancy was about 72.8 years (68.7 for men and 76.4 for women) at the start of the 21st century</p> <ul style="list-style-type: none"> <li>• Infant mortality rate was 20.7 per 1000 livebirths (2006)</li> <li>• Decrease in the prevalence of Hansen's disease and immunisation-preventable diseases</li> <li>• Life expectancy increased to 72.8 years (69.6 for men and 76.7 for women; 2008)</li> </ul>
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Figure 2: The historical process of health sector organisation and the background to the Brazilian health-care system



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Figure 3: Oswaldo Cruz depicted in a campaign for smallpox vaccination

responsibility for provision of health care was extended to trade unions, and philanthropic institutions provided care for rural workers.<sup>35</sup> Direct subsidies to private businesses for the provision of health care to their employees were replaced by income tax discounts,

fostering expansion of medical-care supply and proliferation of private health-care plans.<sup>36</sup> Increased social security coverage and a health-care market based on fee-for-service payments from private sector providers gave rise to a funding crisis in the social security system, which, with the economic recession during the 1980s, fuelled reform aspirations.<sup>37</sup>

**The Brazilian health sector reform**

The health sector reform in Brazil was ideologically at odds with the post-welfare health sector reforms happening worldwide at that time.<sup>38</sup> The Brazilian proposal, which began to take shape in the mid-1970s, was formed during the struggle to restore democracy. A widespread social movement grew,<sup>39</sup> bringing together initiatives in different sections of society—from grassroots sectors to middle-class populations and trade unions—and in some cases in conjunction with the then-illegal left-wing political parties. The Brazilian health reform movement's political and ideological viewpoint was of health not as an exclusively biological issue to be resolved by medical services, but as a social and political issue to be addressed in public.<sup>37,40</sup> Progressive public health professors, researchers from the Brazilian Society for the Advancement of Science,

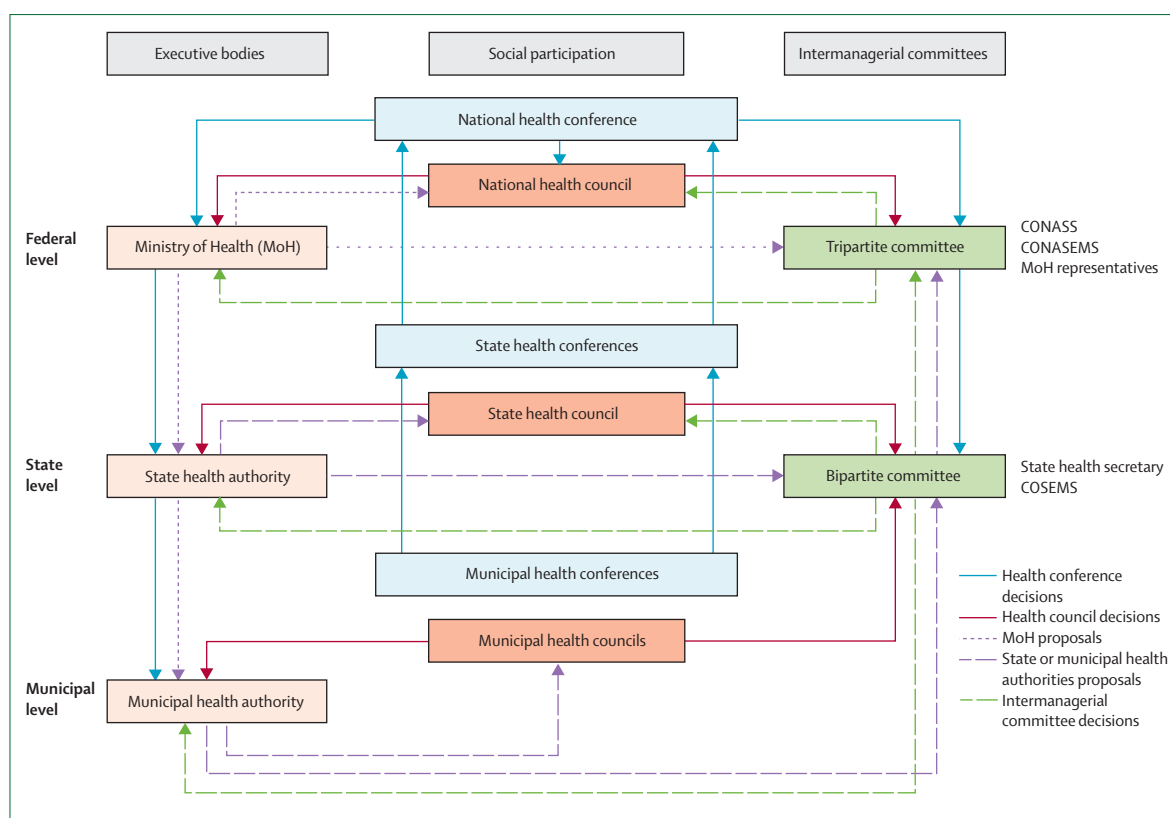


Figure 4: SUS policy-making and social participation process

CONASS=national council of state officers. CONASEMS=national council of municipal health secretaries. CONSEMS=state council of municipal officers. Data from reference 47.

and health professionals engaged with grassroots and trade union struggles. The Brazilian Health Studies Centre (CEBES) was founded in 1976 to organise the health reform movement, and in 1979 the Collective Health Postgraduate Association (ABRASCO) was formed. Both organisations provided an institutional basis for leveraging reforms.<sup>37</sup>

The health reform movement spread and formed an alliance with progressive members of congress, municipal health, and other social movements. Meetings of municipal health officers were held from 1979 onwards, and in 1980 the National Council of State Officers (CONASS) was constituted.<sup>29</sup>

In 1986, the 8th National Health Conference approved health as a citizen's right, laid out the foundations of the SUS, and resulted in the development of several strategies that allowed for coordination, integration, and resource transfers between federal, state, and municipal health institutions, administrative changes that set the groundwork for future actions by the SUS. Then, during the National Constituent Assembly (1987–88) the health reform movement and its allies secured approval for reform, despite strong opposition from a powerful and mobilised private health sector (figure 2).<sup>37,41</sup> The 1988 constitution was proclaimed at a

time of economic instability, with social movements on the retreat, neoliberal ideology spreading, and workers losing purchasing power. At the same time as this reform, private health companies were reorganising to meet the demands of new clients, receiving financial support from the government, and consolidating private health sector investments.<sup>42</sup>

### The present Brazilian health system

The Brazilian health system is made up of a complex network of complementary and competitive service providers and purchasers, forming a public–private mix that is financed mainly by private funds. The health system has three subsectors: the public subsector (SUS), in which services are financed and provided by the state at the federal, state, and municipal levels, including military health services; the private (for-profit and non-profit) subsector, in which services are financed in various ways with public or private funds; and the private health insurance subsector, with different forms of health plans, varying insurance premiums, and tax subsidies. The public and private components of the system are distinct but interconnected, and people can use services in all three subsectors, depending on ease of access or their ability to pay.



### The public health-care subsystem

Implementation of the SUS began in 1990, the same year as the investiture of Fernando Collor de Mello, the first president elected by popular vote since the military dictatorship, who pursued a neoliberal agenda and would not commit to the health sector reform. Nonetheless, in 1990, a framework health-care law (Law 8080/90) was approved, specifying the attributions and organisation of the SUS. The health sector reform project was revived in 1992 after the President's impeachment for corruption. Decentralisation was reinforced<sup>43</sup> and the Family Health Programme (PSF) was launched. A new economic stabilisation plan (The Real Plan) was introduced in 1994, outlining macroeconomic adjustment policies and projects for state reform.<sup>44</sup> President Fernando Henrique Cardoso was elected to office in 1994 (and was re-elected in 1998) and further encouraged macroeconomic adjustment and privatisation processes. President Luiz Inácio Lula da Silva (elected in 2002 and re-elected in 2006) maintained some aspects of his predecessor's economic policy, but suspended privatisation and, in his second term, favoured a developmental agenda.

Although health sector reform became less of a political priority during the 1990s, various initiatives were undertaken, including development of a national HIV/AIDS prevention and control programme, increased tobacco control efforts, creation of the national sanitary surveillance agency, development of the National Supplementary Health Agency, and creation of a model of care for Indigenous health. The Mobile Emergency Care Service and the National Oral Health Policy (*Brasil Sorridente*), were initiatives, among many others, implemented after 2003, during the administration of President Lula (figure 2).

### Decentralisation and participatory management

Decentralisation of the health system was linked to a wider process of political transition and the redesign of the Brazilian Federation, which was started by democratic political movements in the 1980s and later shaped by macroeconomic adjustment programmes. This new federative agreement gave more independence to municipalities but also expanded federal resources and oversight. Health was the only sector that pursued such radical decentralisation, largely because of federal financial and regulatory actions.

Decentralisation of the health system was the underlying rationale for implementation of the SUS and involved complementary legislation, new rules, and administrative reform at all levels of government. Bylaws passed by the Ministry of Health—designed to redefine responsibilities—established funding mechanisms (including the Primary Care Quota, a per-person amount that the Ministry of Health transfers to municipalities to finance primary health care), and set up new representative councils and management

committees at each level of government. Since 2006, some of these laws have been replaced by a less hierarchical agreement (the Pact for Health) in which managers in each level of government sign commitments to health goals and responsibilities.<sup>45</sup>

To manage the decentralised policy, frameworks for government decision making were expanded, together with social participation and alliance-building between stakeholders.<sup>46</sup> In addition to the national health conferences, an innovative structure was institutionalised by setting up health councils and intermanagerial committees at both the state (bipartite) and federal (tripartite) levels. Bipartite and tripartite decisions are reached by consensus (figure 4).<sup>48–53</sup>

These political structures were groundbreaking innovations in Brazilian governance because they enabled a greater number and variety of stakeholders to take part in the decision-making process and defined areas of institutional responsibility more clearly than before, guaranteeing that each level of government supports national health policy implementation.<sup>51,54–56</sup>

### The private health-care subsystem

Historically, state protection of the private sector in Brazil has fostered the privatisation of health care in medical practices and the creation of specialist diagnostic and therapeutic clinics, private hospitals, and private health insurance companies. The private health-care subsystem interfaces with the public sector by providing services contracted-out by the SUS, out-of-pocket hospital and ambulatory services, drugs, and private health plans and insurance. Part of this supply is financed by the SUS and the rest is financed by private sources. The demand for private health plans and insurance is mostly from employees of public and private companies that offer private health plans and insurance coverage.

In 1998, 24·5% of Brazil's population had health insurance—18·4% had private insurance and 6·1% had insurance for civil servants. This proportion grew slightly to 26% in 2008, and, in 2009, resulted in revenues of R\$63 billion (about US\$27 billion). Private dental plans have grown substantially.<sup>57</sup>

The private health plan and insurance market is concentrated in the southeast region, where 61·5% of health companies are based and 65·5% of all contracts are held.<sup>58</sup> Furthermore, of 1017 health-care companies, only a few dominate the market, with 8·2% of companies providing health plans and insurance policies to 80·3% of customers—many smaller companies are located on the edges of large cities and in small towns.

Most (77·5%) private plans and insurance policies (for both state-sector and private sector companies) are provided by commercial firms. Some employers who offer health plans to their employees (self-insured employer health plans) make up the non-commercial

segment of the market.<sup>59</sup> Private health plans have been able to enrol a younger, healthier population<sup>2</sup> and offer plans with different levels of choice and type of health-care provider. Because demand is stratified by socioeconomic and occupational status, the quality of care and amenities available to employees of the same company can vary substantially, from executive-type plans that offer the best services<sup>34</sup> to less-costly plans available to employees lower in the occupational hierarchy.

People with private health plans or insurance policies report having better access to preventive services and higher health-care use rates than do those without such plans or policies (table 3).<sup>2</sup> However, people with private health plans and insurance policies often receive vaccines, high-cost services, and complex procedures such as haemodialysis and transplants through the SUS.<sup>60</sup>

The National Supplementary Health Agency was created in 2000 to provide legal and administrative regulation of the private health insurance market. Law 9656/98 made it illegal for insurance companies to deny coverage to patients with pre-existing disorders or to set limits on the use of specific health-care services or procedures. The continuous expansion of the private subsector is subsidised by the state, while the public subsector is often underfunded, which potentially compromises its ability to guarantee quality of and access to care.<sup>61</sup>

### Health system components

The SUS is tasked with undertaking health promotion, health surveillance, vector control, and health education, and with ensuring continuity of care to all Brazilians at the primary, specialist outpatient, and hospital levels.

### Financing

The Brazilian health system is financed through taxes, social contributions (taxes for specific social programmes), out-of-pocket spending, and employers' health-care spending. Funding for the SUS comes from tax revenues and social contributions from the federal, state, and municipal budgets. Other sources of funding are private—ie, out-of-pocket and employer spending. Funding for the SUS has not been sufficient to ensure adequate or stable financial resources for the public system. Because social contributions have been larger than contributions from taxes, which are divided between federal, state, and municipal governments, the SUS has remained under-financed. In 2006, revenue from social contributions (17.7%) was greater than revenue from taxes (16.7%). At the federal level, social contributions are about 60% of overall revenue from levies and less than 30% of tax revenue.<sup>62</sup> Furthermore, the federal government receives 58% of tax revenues, whereas state governments receive 24.7% and municipalities receive 17.3%.<sup>62</sup>

Even proceeds from a social contribution introduced in 1997 specifically for health funding (the Provisional

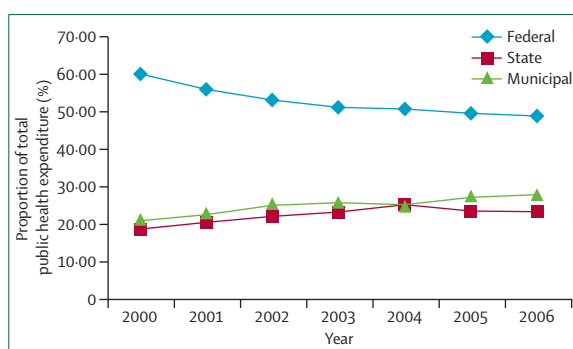


Figure 5: Public spending on health by level of government  
Data from reference 7.

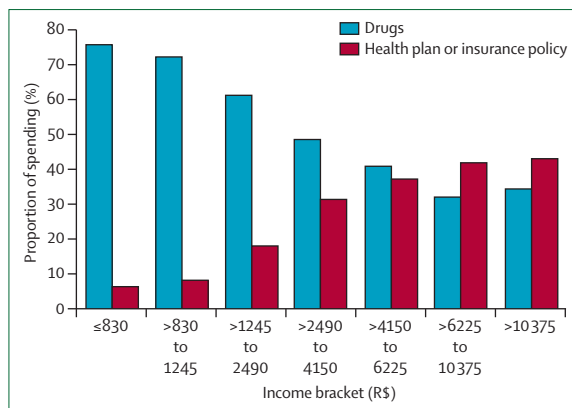
	R\$m (%)	% GDP
Taxes and social contributions	53 329 (39.05%)	3.14
Federal	27 181 (19.90%)	1.6
States	12 144 (8.89%)	0.7
Municipalities	14 003 (10.25%)	0.8
Private	83 230 (60.95%)	4.89
Family spending <sup>66*</sup>	65 325 (47.84%)	3.84
Employer company spending <sup>60†</sup>	17 905 (13.11%)	1.05
Total	136 559 (100%)‡	8.03

Data from references 6 and 7, unless otherwise stated. GDP=gross domestic product. \*Estimated from the national household expense survey 2002–03 (corrected by the consumer-price inflation index). †Estimated from information on private health plan and insurance billing provided to the national health insurance regulatory agency. ‡GDP in 2006=R\$1.7 trillion.

Table 4: Estimated health spending in 2006

Contribution on Financial Transactions) are channelled away from the health sector: in 2006, the health sector received only about 40% of the R\$32 090 billion (US\$ 13 645 billion) raised by the Provisional Contribution on Financial Transactions<sup>63</sup>—a substantial proportion of the remaining funds went towards paying interest and public debts.<sup>64</sup> In 2007, this social contribution was repealed and the amount previously planned for health spending has not been replaced. Since 2007, reductions in the federal share of SUS financing have been only partly balanced by increased state and municipal health spending (figure 5).

Federal spending on health care since 2003 increased in nominal terms, but adjustment for inflation shows a net decrease (table 1). So in 2007, only 8.4% of the gross domestic product was spent on health care. In 2007, the public share of health spending was 41%,<sup>8</sup> which is low when compared with such spending in countries like the UK (82%), Italy (77.2%), and Spain (71.8%), and is also lower than countries such as the USA (45.5%) and Mexico (46.9%).<sup>65</sup> Private sources of finance—direct spending by families and companies, with direct and indirect government subsidies—fund most private health care plans, insurance policies, and drug



**Figure 6: Out-of-pocket health spending**  
Data from reference 7.

purchases (table 4). Out-of-pocket spending as a proportion of total spending varies little between the poorest (5.83%) and wealthiest (8.31%) classes. However, differences exist in how each group spends these funds; the poorest spend most on medications, whereas the richest spend most on private health plans and insurance (figure 6).

The SUS has thus done less to increase public funding for people's health care needs than was envisaged when it was set up with the aim of establishing a universal and equitable health system in Brazil funded with public resources. National Household Survey (PNAD) data<sup>2</sup> show that, in 1981, 68% of total health services provided in the month before the survey were paid for by public funds, 9% by private health plans or insurance policies, and 21% by out-of-pocket spending. By 2003, the proportion of health service consumption paid for by public funds fell to 56%, and remained at that level in 2008. However, contribution by health insurance companies has become much greater (21% of total spending in 2008), with the volume of services paid for by this sector increasing by 466% from 1981 to 1998. The proportion of spending from out-of-pocket payments has increased steadily from 9% in 1981 and 1998, 15% in 2003, and 19% in 2008. In 1981, the social security system paid for 75% of hospital admissions, whereas in 2008 the SUS paid for only 67%. In 1981, 6% of hospital admissions were paid for by private health plans, a proportion that rose to 20% by 2008. The proportion of hospital admissions paid for out of pocket (about 10% in 2008) has remained constant since 1981.

### Organisation and delivery of health services

#### Primary care

The development of primary health care, or basic care as it is called in the SUS, has been the subject of much attention in Brazil. Driven by the decentralisation process and supported by innovative programmes, the primary health care model aims to provide universal access and

comprehensive health care, coordinate and expand coverage to more complex levels of care (eg, specialist care and hospital care), and implement intersectorial actions for health promotion and disease prevention. Several financial (eg, the Primary Care Quota) and organisational strategies have been used to meet this challenge, notably the Community Health Agents Programme and the PSF. The PSF and the Community Health Agents Programme were part of the government's strategy for restructuring the primary health care and the SUS health-care models. Initially introduced as a vertical programme that offered mainly maternal and child health services to more needy or at-risk populations, since 1998 the PSF has been the main strategy for structuring municipal health systems. An innovative feature of the PSF is its emphasis on the reorganisation of primary clinics to focus on families and communities and integrate medical care with health promotion and public health actions.

The PSF works through family health-care teams—which are composed of one doctor, one nurse, one auxiliary nurse, and four to six community health workers—and, since 2004, the PSF has begun to include oral health teams, of which there were 17 807 in 2009.<sup>67</sup> Family health teams are located at PSF clinics, and are assigned to specific geographical areas and defined populations of 600–1000 families. The teams provide a first point of contact with the local health system, coordinate care, and work towards integration with diagnostic, specialist, and hospital care. Health services and health promotion activities take place at health facilities, in patients' homes, and in the community. The PSF has expanded substantially; in 2010 there were roughly 236 000 community health workers and 33 000 family health-care teams, reaching about 98 million people in 85% (4737) of municipalities in Brazil.

The trend towards the setting up and strengthening of regulatory structures in municipal health secretariats and family health clinics, although in its early stages, has been strongly influenced by the expansion of the PSF. Municipalities have invested in decentralised and computerised regulatory systems, which has meant that some of them can monitor waiting lists for specialised care, increase service supply, introduce clinical guidelines, and use electronic medical records as strategies for integrating primary health care with the network of specialised services. The Ministry of Health has also introduced evidence-based clinical guidelines for the management of chronic disease.<sup>68</sup>

Investments in primary health care have brought about some positive results. In 2008, primary care was reported as the usual source of care for most Brazilians (57%, up from 42% in 1998), whereas the proportion of people who reported hospital outpatient departments as their usual source of care decreased from 21% to 12% in the same period.<sup>2</sup> Some users of the family

	1970 <sup>2</sup>	1980	1990	2000	2010 <sup>3</sup>
<b>Services</b>					
Health posts and health centres	2149	8767 (1981)	19 839	..	41 667
Public (%)	..	98.9	98.3	..	98.7
Specialist outpatient clinics	..	6261	8296	..	29 374
Public (%)	..	53.9	20.6	..	10.7
Polyclinics	32	..	..	..	4501
Public (%)	..	..	..	..	26.0
Diagnosis and therapy centres	..	..	4050 (1992)	7318 (1999)	16 226
Public (%)	..	..	5.4	4.9	6.4
General and specialised emergency units	100	292 (1981)	286	..	789
Public (%)	..	43.5	65.7	..	77.9
Hospitals	3397 (1968)	5660 (1981)	6532	7423 (2002) <sup>5</sup>	6384
Public (%)	14.9	16.4	21.1	34.8	31.90
<b>Equipment</b>					
Mammography machines (n)	..	..	..	1311 (2006)	1753
Public (%)	..	..	..	25.9%	28.4%
Radiography machines (n)	..	..	..	13 676	15 861
Public (%)	..	..	..	54.3%	58.9%
CT scanners (n)	..	..	..	952	1268
Public (%)	..	..	..	22.4%	24.1%
MRI scanners (n)	..	..	..	212	409
Public (%)	..	..	..	14.6%	13.4%
Ultrasound devices (n)	..	..	..	6789	8966
Public (%)	..	..	..	48.9	51.0
<b>Family health teams<sup>22</sup></b>					
Community health workers (n)	..	..	78 705 (1998)	134 273	244 000 <sup>82</sup>
Family health teams (n)	..	..	3062	8503	33 000
Health workers in oral health teams (n)	..	..	0	0	17 807 (2008)

Data are from reference 1, unless otherwise stated. The year in which data is from is given in parentheses if not from the year in the column heading. ---data not available.

**Table 5: Supply of services, equipment, and human resources, 1970–2010**

health-care clinics reported that referrals to secondary care services are more effective when the referrals come from the family health-care teams, and that waiting times were shorter than with referrals from other sources.<sup>69</sup> However, a substantial proportion still sought specialised services without a referral from primary care.<sup>69</sup>

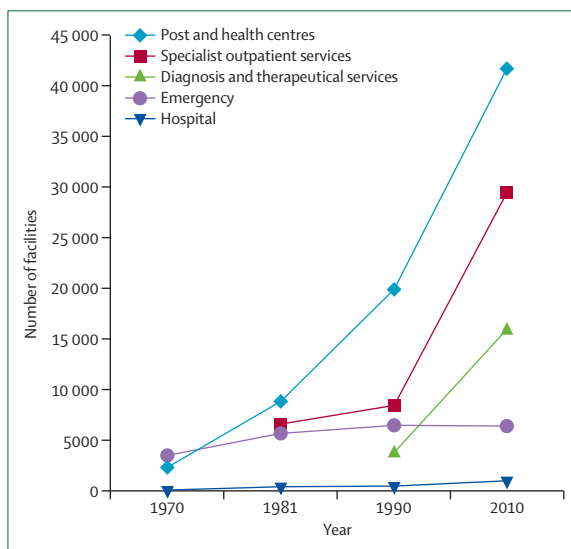
Use of PSF services is also associated with improvements in some health outcomes, such as lower post-neonatal infant mortality rates (largely attributable to a reduction of deaths from diarrhoeal disease and lower respiratory tract infections),<sup>70–72</sup> This effect is more pronounced in municipalities that are capable of taking over outpatient service management from the federal or state governments.<sup>73</sup> Health system benefits include improvements in the reporting of vital statistics and reductions in potentially avoidable hospital admissions, which have decreased by almost 15% since 1999.<sup>74–76</sup>

Even though the number of temporary labour contracts has decreased, the primary care workforce still has high turnover, mainly because of differing wage structures and employment contracts offered by

different municipalities.<sup>77</sup> Expansion and consolidation of the PSF is further complicated by the presence of many traditional primary care facilities that were established before the PSF,<sup>78</sup> which are often in the same geographical areas as PSF clinics. Generally, these two distinct models of care are not integrated and the population resorts to one service or the other, according to ease of access and convenience.<sup>78</sup> In 2010, 15% of municipalities did not have PSF teams.<sup>67</sup> There is also little investment into the linking of primary care with other levels of care; the supply of specialist and other care is further weakened by the poor integration of municipal-level and state-level providers, especially in the provision of diagnostic examinations. Municipal-level management capabilities are often poor, as is national regulation. Such drawbacks prevent the primary health-care model from fully meeting its objectives<sup>69</sup> and draw attention to the continually evolving nature of strategies such as the PSF. To address concerns and improve service access and quality, the government launched the national primary care policy in 2006 and created family health support teams in

**Panel 1: Additional health services and agencies**

- The National Indigenous Health Policy, formulated in 1996 but not operationalised until the 1999 Arouca Law<sup>86</sup> defined 34 special sanitary districts, provides primary health care to Indigenous populations through multidisciplinary health teams and is organised in conjunction with the PSF.
- The National Transplant System is one of the largest public organ transplant systems in the world.<sup>87</sup> In 2009, 5834 solid organ transplants were done in Brazil, representing an increase of 62% since 2000.<sup>88,89</sup>
- The National Health Promotion Policy is designed to promote quality of life and reduce individuals' vulnerability to health risks that are connected with social determinants.
- The Ministry of Health has encouraged integration of the Health Surveillance Secretariat and the National Sanitary Surveillance Agency to improve health promotion, epidemiological surveillance, environmental health, workers health, health surveillance, health situation analysis, and vital statistics.<sup>90</sup>
- Specific policies and programmes ensure that care is provided to the black population,<sup>91</sup> people with disabilities, people in need of emergency care, people with kidney<sup>92</sup> and cardiovascular diseases,<sup>93</sup> people with mental health disorders, and people with oral health disorders, and improve access to pharmaceutical care for the entire population.



**Figure 7: Type of health-care facilities in Brazil, 1970–2010**  
Data from references 21, 102, 103.

2008. These multiprofessional teams partner with the PSF to expand the coverage and scope of primary health-care actions and to support the development of regional referral networks.

**Secondary care**

Provision of secondary care by the SUS is problematic, because service supply is restricted and often given preferentially to individuals with private health plans.<sup>79</sup> Secondary care has little regulation and medium-complexity procedures are often neglected in favour of high-cost ones.<sup>80</sup> The SUS is highly dependent on contracts with the private sector, especially for diagnostic and therapeutic support services;<sup>69</sup> only 24.1% of CT scanners and 13.4% of MRI scanners in Brazil are public, and access is patchy.<sup>81</sup>

However, policies to improve supply have led to an increase in specialist outpatient procedures in the SUS in the past 10 years.<sup>61</sup> In 2010, such procedures accounted for about 30% of outpatient visits (table 5).

Furthermore, the Psychiatric Reform Law was passed in 2001 to deinstitutionalise and reinforce the rights of individuals with mental illness, and led to the introduction of outpatient services, such as psychosocial care centres and psychosocial support and rehabilitation for those leaving psychiatric hospitals. The law has led to a reduction of 20 000 psychiatric hospital beds between 2001 and 2010.<sup>83</sup> The number of community-based psychosocial care centres has more than tripled (from 424 to 1541) and the number of therapeutic services has increased by five times (from 85 to 475) since the passing of the psychiatric law (figure 2).<sup>84,85</sup>

The secondary care system has also seen the introduction of specialised centres for dental care, counselling for HIV/AIDS and other sexually transmitted diseases, and workers' health and rehabilitation services. 24 h emergency care clinics were introduced in 2008 to relieve demand on hospital emergency departments. They coordinate with the emergency mobile care service, assisting people on the street, at home, and at work, with ambulances with basic or advanced support, helicopters, boats, and even motorcycles. By May, 2010, there were 391 emergency care clinics, and the emergency mobile care service was present in 1150 municipalities, covering 55% of Brazil's population.<sup>84</sup> In 2008, the SUS provided 74% of all emergency home care assistance.<sup>2</sup>

During the health sector reform, the trend has been to structure parallel subsystems in the SUS to respond to specific needs, which leads to difficulties in coordination and continuity of care (panel 1). In 2007, the Ministry of Health set up a department that is responsible for the integration of primary care with emergency and specialised care services and health surveillance actions, to foster improved clinical management, health promotion, and rational use of resources.<sup>94</sup>

**Tertiary and hospital care**

Tertiary care includes some high-cost procedures, which are done predominantly by contracted private sector providers and public teaching hospitals, and are

paid for by the SUS at about market value.<sup>81</sup> As in many health systems around the world, the Brazilian health system's challenges include the control of costs, improvement of efficiency, assurance of quality and safety, provision of access to comprehensive care, coordination with primary health care, and inclusion of doctors in problem solving.<sup>2,95,96</sup> The system is not organised into a regionalised network of services nationwide, and systematic, effective regulatory and referral mechanisms do not exist.<sup>97</sup> Specific policies for some high-cost care in the SUS do exist (eg, a system to manage waiting lists for organ transplants), and some specialties, such as cardiac surgery, oncology care, haemodialysis, and organ transplantation, are being organised into networks.

The Ministry of Health has attempted to organise networks by strengthening the PSF and implementing Integrated Health Care Territories.<sup>94</sup> However, structural, procedural, and political obstacles, such as power differentials between network members, low levels of accountability, administrative discontinuities, and politically-motivated managerial turn-over, could compromise the effectiveness of such initiatives.<sup>22,97-99</sup> In the private sector, the managed care model was adopted by only a few private health plan companies, along with a care model centred on individual demand rather than on population-based health promotion strategies.

The likelihood of a patient being admitted to hospital increases with the availability of beds and primary care clinics and decreases with the distance between the municipality in which the patient lives and the municipality in which care can be provided.<sup>100</sup> This situation is cause for concern, because one in five hospital admissions in the SUS are to hospitals outside of the patient's home municipality. Accordingly, residents of poor municipalities are less likely to be admitted to hospital than are residents of wealthier ones, which calls for policies to not only regionalise capacity and guarantee the transportation of patients to hospital, but to also change models of care to reduce such inequalities in access to hospitals. Regulation of the SUS has been influenced by various interest groups, from the private sector to advocacy groups associated with the sanitary reform movement.<sup>101</sup> Unfortunately, existing regulatory mechanisms are not yet sufficiently robust to allow major changes to the historical patterns of hospital medical care.

### Infrastructure (supply)

Primary care clinics and emergency units are mainly public, whereas hospitals, outpatient clinics, and diagnostic and therapeutic services are mainly private. In 2010, only 6.4% of diagnostic and therapeutic services were public. Between 1968 and 2010, 39 518 primary care clinics (health posts and health centres) were set up. In the past 10 years the model of care has changed, with increases in specialist outpatient services (29 374 clinics

### Panel 2: Human resources in the SUS

The 1988 Constitution assigned responsibility for the organisation of health worker training to the SUS

- The Nursing Staff Professional Training Project—Brazil's largest ever health training and technical capacity building project—employed 13 200 nurses to train 230 000 auxiliary nurses<sup>106</sup>
- The Ministry of Health supports the academic boards of undergraduate health-care courses and public health schools to run internships and the Ministry of Education oversees the qualification of health personnel from the undergraduate level onwards
- The Ministry of Health provides financial incentives to higher education institutions to make curricular changes that favour primary care, in line with guidelines from the national board of education—more than 350 faculties (with more than 97 000 students) participate
- The SUS Open University, set up in 2008, comprises 12 public universities, two state health secretariats, and telemedicine units<sup>84,107,108</sup>

### Panel 3: Drugs, vaccines, and blood products

- The drug market in Brazil is dynamic. By 2013, the drugs market in Brazil is expected to be the 8th largest in the world. Between 1997 and 2009, revenue from drug sales grew at 11.4% per year (in current value), totalling R\$30.2 billion (US\$17.6 billion), 15% of which was from the sale of generic drugs.
- The National Listing of Essential Medicine ensures access to and rational use of drugs, resulting in increased public spending, improved access to drugs, and a successful generic drugs policy,<sup>112</sup> although universal access to pharmaceuticals has not been achieved.<sup>113</sup>
- The Ministry of Health has promoted the production of generic drugs and seeks to reduce the importation of other drugs by strengthening Brazilian drug companies to produce 20 products essential to the SUS within Brazil by 2013. The antiretroviral zidovudine has been produced in Brazil since 1994 and laboratories have produced efavirenz since 2007.
- The outlook for vaccines is promising. Brazil has exported yellow fever and meningitis vaccines. In 2007, 83% of vaccinations in Brazil used vaccines that were produced nationally.
- In 2014, Hemobras (a blood product manufacturer) will produce albumin and other essential blood products at costs lower than the price of imported products.
- There are 79 010 commercial drugstores and pharmacies in Brazil.

in 2010) and diagnostic and therapeutic support services (16 226 in 2010; table 5). Between 1990 and 2010, the number of hospitals—especially private hospitals—has decreased (figure 7).

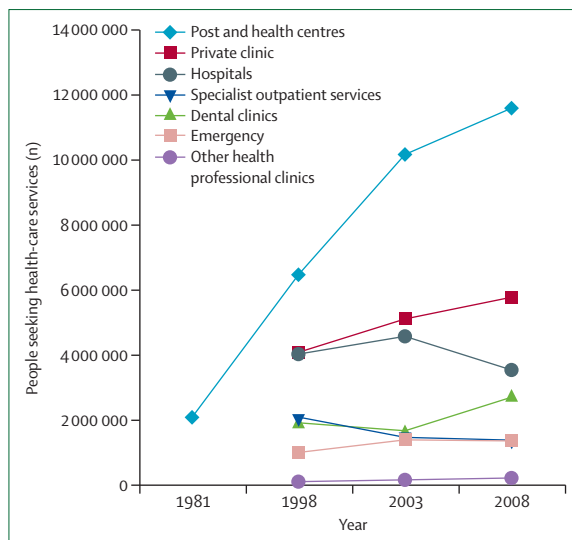


Figure 8: Health service demand by service type  
Data from reference 1.

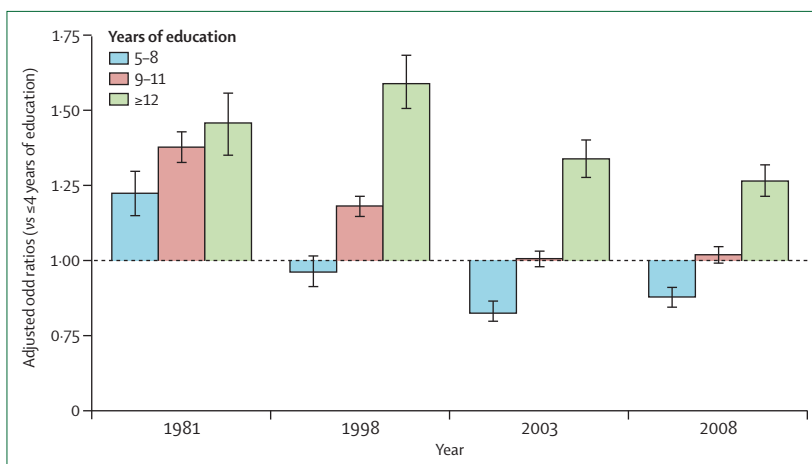


Figure 9: Health-care service use in the previous 2 weeks, by level of education and year

Brazil has 6384 hospitals, 69.1% of which are private. Only 35.4% of hospital beds are in the public sector—38.7% of beds in the private sector are available to the SUS through contracts.<sup>21</sup> A quarter of public hospitals are controlled by municipal governments. After decentralisation, many new hospitals were set up, averaging 35 beds each. As a result, about 60% of hospitals have 50 or fewer beds.<sup>1</sup> These new, small hospitals—mainly municipal and for-profit hospitals—tend to be less effective and less efficient than larger, hospitals.<sup>104</sup> At the other extreme, in 2005, there were 67 hospitals with more than 400 beds, mostly in the wealthiest (southeast) region of Brazil. The north region has no hospitals with more than 400 beds, but contains 9.5% of smaller hospitals.<sup>105</sup>

Supply of hospital beds financed by the public sector is not sufficient. In 1993, Brazil had an inpatient bed density of 3.3 beds per 1000 population, this number

has decreased to 1.9 beds per 1000 population in 2009, which is lower than that of all countries in the Organisation for Economic Co-operation and Development, apart from Mexico (1.7 per 1000 population in 2007).<sup>65</sup> The number of health professionals has, however, increased substantially in the past 10 years. In 2007, there were 1.7 doctors per 1000 population, although geographical distribution was uneven.<sup>3</sup> There were also 0.9 nurses and 1.2 dentists per 1000 population, with a distribution much the same as that of doctors. Private universities have played an important role in the increase in number of health professionals by offering many undergraduate places in health profession courses, especially in nursing courses. Between 1999 and 2004, the number of nursing graduates increased by 260% (table 5; panel 2).<sup>109</sup>

In 2005 the public sector provided 56.4% of employment in Brazilian health care, mostly at the municipal level (38.8%). Doctors accounted for 61% of the jobs, nurses accounted for 13%, and public health specialists accounted for only 0.2%.<sup>9</sup>

In the 1970s and 1980s some of Brazil's most important health information systems were set up, including the SUS Hospital Information System. The Mortality Information System was introduced in 1975, and, in 1990, the Live Births Information System was launched to provide standardised data collection procedures at all hospitals—by 2002 it included data for 86% of all livebirths.<sup>110</sup> More effective policies are needed to improve the coverage and quality of health information systems and administrative data, which, at present, vary substantially across health information systems.<sup>111</sup>

Brazil has some prestigious research institutes, such as the Oswaldo Cruz Foundation (FIOCRUZ) and several world-class public universities. Research and technology are supported by the Ministry of Health's Science and Technology Department and the National Scientific and Technological Development Council, which fosters health research and the incorporation of new technologies by the SUS and the health industry with a view to strengthening Brazil's pharmaceutical and equipment industry (panel 3).

#### Access to and use of health care

Access to health care in Brazil improved substantially after the creation of the SUS. In a PNAD survey done in 1981, before creation of the SUS, 8% (9.2 million people) of the population reported use of a health service in the previous 30 days, whereas, in 2008, 14.2% (26 866 869 people) of the population reported such use in the previous 15 days, representing a 174% increase in health-care service use.<sup>2</sup> The number of people seeking primary health care in clinics increased by about 450% between 1981 and 2008 (figure 8). This increase was mainly attributable to a substantial increase in the size of the health workforce and the number of primary care clinics. In 1998, 55% of the population consulted a

doctor and that figure rose to 68% in 2008. However, this number is low compared with such proportions in more developed countries, which range from 68% in the USA to more than 80% in countries such as Germany, France, and Canada.<sup>112</sup> In 2008, 76% of individuals in the highest income group reported visiting a doctor, compared with 59% of individuals in the lowest income group, which shows that socioeconomic inequity exists.<sup>2</sup> Such inequity does not exist among people who self-rate their health as poor,<sup>114</sup> indicating that people with serious health disorders are able to seek health care and receive treatment, irrespective of their socioeconomic class.

In 2008, 93% of people seeking health care received treatment, suggesting that health care is available to most when needed, and that the recorded social inequities may in fact be because of differences in health-seeking behaviour. Perhaps people in lower income groups delay the decision to seek health care because of negative experiences in getting the care they needed or with the care they received, or because of other factors such as inability to miss work.<sup>115</sup>

Educational inequities in health care service use are steadily decreasing (figure 9). Although health service use varies widely between people who have private health insurance and those who do not, the difference between these two groups of people is also decreasing—in 1998, people with private health plans were 200% more likely to use a health service when in need than were people without such plans, but only 70% more likely in 2008.<sup>2</sup>

In 1981, only 17% of Brazil's population had consulted a dentist, and little had changed by 1998, when nearly 30 million people (19% of the population) declared that they had never been to a dentist.<sup>2</sup> In 2000, financing for oral health workers for the PSF began and, by 2008, 40% of the population reported having visited a dentist in the previous year—only 11.6% reported having never visited a dentist.<sup>2</sup> However, major socioeconomic inequities exist; in 2008, 23.4% of people in the lowest income group, compared with only 3.6% of those in the highest income group, had never consulted a dentist.<sup>2</sup> Socioeconomic disparities exist between individuals covered by private health insurance plans and those covered by the PSF (figure 10), which indicates that rich and poor populations receive different standards of care in the Brazilian health system.

Set up in 1973, the National Immunisation Programme stands out as one of Brazil's most successful public health programmes, as shown by its high vaccination coverage and sustainability—vaccines are supplied by the National Self-Sufficiency Programme in Immunobiologicals, which guarantees free access and high coverage. There have been no cases of poliomyelitis in Brazil since 1989, nor measles since 2000 (table 3).<sup>116</sup>

Despite an increase in population size and substantial population ageing, hospital admission rates for most disorders (about seven admissions for all disorders per

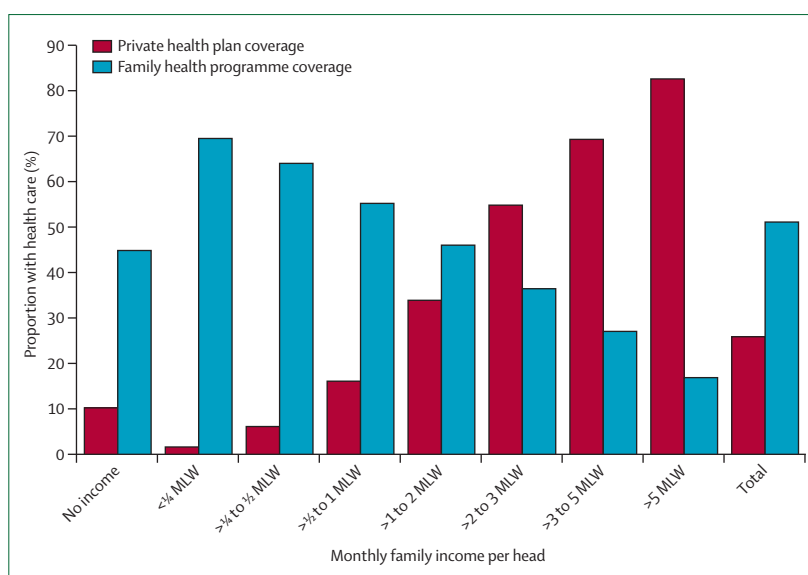


Figure 10: Health-care cover by financial income, 2008

Data from reference 2. MLW=minimum legal wage.

100 population) did not change between 1981 and 2008.<sup>3</sup> The number of admissions financed by the public sector decreased during the same period. In 1982, the social security system financed 13.1 million admissions per year—a number that decreased to 11.1 million (financed by the SUS) in 2009. Admission rates are consistently higher for people with private health insurance (about eight admissions per 100 population) than they are for those without (table 1). The Ministry of Health has restricted hospital spending by each state, limiting hospitalisation payment according to population size, which could partly explain reduced access to hospital care and could have resulted in the underuse of hospital care by individuals who depend on publicly funded services.<sup>114</sup>

Despite growing awareness of the importance of quality of care in Brazil, much progress is still needed to ensure consistently high standards of care. The Ministry of Health and the national sanitary surveillance agency promote WHO initiatives to ensure the safety of patients, but adherence by services is low. For example, preventable adverse events in hospitals are very high (67% of all adverse events were thought to be preventable).<sup>94,115</sup> The high frequency of adverse drug events is also a cause for concern,<sup>117</sup> as is the frequency of nosocomial infections.<sup>118</sup> Only a small proportion of health services have received accreditation. Highly skilled health professionals and high-quality health services do exist, but coherent ministerial policies for quality improvement and enforcement are lacking. As a result, a few states (eg, São Paulo, Minas Gerais<sup>6</sup>) and municipal health secretariats have developed their own approaches to improve quality.

The Ministry of Health's National Humanisation Policy<sup>119</sup> and the Code of Medical Ethics reinforce patients'



rights<sup>120</sup> and reduce instances of discrimination, but improvements (such as new policies) are needed to guarantee better quality care, the safety of patients, and patients' rights in Brazilian health services.

### Conclusions

The 1988 Brazilian constitution recognised health as a citizen's right and a duty of the state, and established the basis for the creation of the SUS, which was based on the principles of universality, integrity, and social participation. Such constitutional recognition of health care was made possible after lengthy political struggles and the actions of the Brazilian Health Reform Movement. The implementation of a universal health system in Brazil began in an unfavourable political and economic climate, which promoted a neoliberal rather than a universal approach—a perspective that was reinforced by international organisations that argued against publicly financed national health systems or advocated for intermediate stages to achieving it.

During the past 20 years advances have been made in the implementation of the SUS. Institutional innovations were introduced, including a substantial decentralisation process that granted municipalities greater responsibility for health service management and means by which to enhance and formalise social participation in health policy making and accountability. In this report we have shown how the SUS has vastly increased access to health care for a substantial proportion of the Brazilian population, achieved universal coverage of vaccination and prenatal care, enhanced public awareness of health as a citizen's right, and invested in the expansion of human resources and technology, including production of most of the country's pharmaceutical needs.

However, the SUS is a health system under continual development that is still struggling to enable universal and equitable coverage. As the private sector's market share increases, interaction between the public and private sectors are creating contradictions and unfair competition, leading to conflicting ideologies and goals (universal access vs market segmentation), which has a negative effect on the equity of health-care access and outcomes. Although federal funding has increased by about four times since the start of the past decade, the health sectors' share in the federal budget has not grown, resulting in constraints on financing, infrastructure, and human resources.

Further challenges arise from the changing demographic and epidemiological characteristics of the Brazilian population, which necessitate transition from a model of acute care to one based on intersectorial health promotion and health service integration. The Pact For Health and its proposed health-care network based on primary care, coupled with recommendations from the National Commission on Social Determinants of Health to address the upstream causes of ill health might help shape more comprehensive models of care, although

they will have to overcome formidable challenges.

Ultimately, to overcome the challenges that Brazil's health system faces, a revised financial structure and a thorough reassessment of public-private relations will be needed. Therefore, the greatest challenge facing the SUS is political. Such issues as financing, composition of the public-private mix, and the persistent inequities cannot be solved in the technical sphere only. The legal and normative foundations have been laid and substantial operational lessons have been learned; the SUS must now be guaranteed its political, economic, and scientific and technological sustainability.

### Contributors

JP and CT had the idea for the report and led the writing of the final version. CA, LB, and JM participated in the design of the report, data collection and analysis, and writing of the final version.

### Conflicts of interest

We declare that we have no conflicts of interest.

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