

Chapter 2

Brazil: Where Have We Been?

**Frederico Bruzzi de Carvalho, Álvaro Réa Neto,
Rodrigo Ferreira Simões, and Monica Viegas Andrade**

Brazil is the world's fifth largest country, both by geographical area and by population. It is the only Portuguese-speaking country in the Americas and the largest lusophone country in the world. The Brazilian economy is the world's eighth largest economy by nominal gross domestic product (GDP) and the ninth largest by purchasing power parity. The population of Brazil is approximately 190 million and 83.75% of the population defined as urban. The population is heavily concentrated in the Southeastern (79.8 million inhabitants) and Northeastern (53.5 million inhabitants) regions [1].

Despite the political and economic stability achieved in recent years, Brazil is rated as 73th country in the Human Development Index, by the United Nations (UN), 75th in the Corruption Perception Index, by the Transparency International, and is one of the worst countries listed in income inequality metrics (and the very last considering medium to larger countries), including UN Gini coefficients [2–4].

The health care system mirrors these social and demographic characteristics.

F.B. de Carvalho, M.D. (✉)

Intensive Care Unit, Hospital Eduardo de Menezes, Fundação Hospitalar do Estado de Minas Gerais – FHEMIG, Rua Araguari 1670/302, Belo Horizonte, CEP 30190-111, Brazil
e-mail: fredbruzcarv@gmail.com

Á.R. Neto, M.D., F.C.C.P.

Internal Medicine Department, Universidade Federal do Paraná – UFPR,
Centro de Estudos e Pesquisas em Terapia Intensiva – CEPETI, Curitiba, Brazil

R.F. Simões, Ph.D. • M.V. Andrade, Ph.D.

Centro de Desenvolvimento e Planejamento Regional – CEDEPLAR, Faculdade de Ciências Econômicas da Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Historical Perspective

The Brazilian Health System has undergone important changes since the 1960s. But only after the 1988 Constitution this system was appropriately defined and the roles of each governmental level and private sector were established [5, 6].

The first major change happened in 1970, when the government determined the extension of the social coverage of the INPS (*Instituto Nacional de Previdência Social*) to autonomous workers and maids. The INPS was created in 1966 to unify the Institutes of Social Welfare of the various working classes. Until then each class of individual workers organized and formed their institute, aiming to provide working benefits (pension and retirement benefits) and the provision of medical care [5].

Thus, until 1970, only workers in the formal sector were guaranteed medical care. The extent of coverage for the other working classes and its growth has brought difficulties for the provision of medical services by INPS. Private institutions were thus recruited and much of the expansion of private institutions has been financed with public funds from the *Fundo de Assistência Social*, created in 1974.

In the early 1980s, the government began two key measures that mark a change in management of public health services in Brazil: the creation of the *Ações Integradas de Saúde* (AIS) and the change in the remuneration for services, which is now held by the *Autorização de Internação Hospitalar* (AIH).

The creation of the AIS was the first toward decentralization of health services from INPS. The AIS institutionalized a new relationship pattern among health sectors, including state and municipal government, it created mechanisms for transferring resources to these bodies that are now responsible for the medical care of the population. The AIH now replaces the system of payment per unit of service. The AIH pays the global historical cost of care, i.e., each payment is authorized by a specific diagnosis and not through the payment of each medical procedure.

From the mid-1980 the private sector begins to exert a complementary role to the public system. Until then, most private services were contracted through the public sector. The late 1980s and late 1990s were marked by great expansion of the private medical system. One factor behind this expansion was the tax incentives created by the federal government, i.e., individual health spending could be reduced from annual income taxes.

The Sistema Único de Saúde

The 1988 Brazilian Constitution, published after 21 years of military dictatorship, postulated that Health Care is a right for all and a state's duty. Thus, the problem was not anymore universal care, but a financial and administrative one. Actually, except in rare excellence centers, public health services are generally of low quality and have a very disproportional balance between service and demand. Not surprisingly, despite said "universal coverage," 28% of the Brazilian population has a supplementary health care plan.

The principles delineated in 1988 were finally published in 1990 in the form of two federal laws: 8080 and 8142, regulating organizational and financial aspects of the public health care system, known as *Sistema Único de Saúde*, or SUS. Its main principles are:

- Universality—Everybody has the right to health care, independently of any social characteristics.
- Equity—Every citizen is equal to the SUS, but different communities may have different needs.
- Integrality—Actions must be done to protect, treat and rehabilitate individuals from disease.

From an administrative point of view the SUS is organized as follows:

- Regionalization and hierarchization—Care must be organized in regional systems and the entry on the health care system should begin from levels of less complexity.
- Resolutivity—systems should be designed to provide all levels of care.
- Decentralization—the main administrative unit of health care planning and execution is municipal.
- Direct citizen participation—through public councils, together with executive and legislative representatives.
- Private sector complementarity—should be organized in the same fashion of SUS, and may provide services to the public sector.

Albeit a little utopic, the principles of SUS were correct, but its implementation was not straightforward. Some of the political, economic, and cultural ambient in the 1990s considered its proposals not that appealing. Physicians and politicians, specially, had an important role on this. After 20 years of “Universal Care” in Brazil, we still have a somewhat fragmented health system, with many actors with very distinct interests, not a minority is divergent.

The major difficulty in the decentralization process of the health system has been the operationalization of the transfer system of resources between the three spheres of government. In terms of competence, the federal government should be responsible only for the mediation of the actions between the states in the field of public health and sanitary surveillance. States should conduct the mediation of activities among the cities in relation to public health and health surveillance, like establishing reference networks. In the SUS, cities are the basic units of management and health care delivery.

This process of decentralization of services has been quite complex and is ongoing. The economic and social heterogeneity between the different regions has certainly made this process even more complicated and diverse. One of the attempts by the federal government has been encouraging the formation of local consortia. Because there are no mechanisms to allow portability of funds to the city providing the service, the formation of consortia may not interest the city that has the installed capacity.

Private Care or Supplementary Health Sector

Currently the Brazilian Health System is characterized as a mixed health system. The private and public sectors coexist. Private medicine in Brazil is organized into different forms, including cooperatives, HMOs-like groups, self-management companies and health insurance plans that differ both in terms of access and payment system, as well as some of the benefits offered.

The Supplementary Health sector was also regulated in 1988 by the Law 9656, comprising all the private and corporate health care plans, including those associated directly or indirectly to any government agency, excluding SUS. This law brought many advances, those which were more interesting were:

- Previous chronic illness must be fully covered in new plans.
- An individual cannot be turned down unilaterally, unless in the absence of payment.
- All procedures and treatments listed by the National Agency must be fully covered.
- Limits to hospital or ICU length of stay, number of days in different admissions, number or types of exams needed or treatment is not allowed.
- Hospital transfer, when medically indicated, is also a responsibility of the health care plan.

The consequences to these new rules were that individual plans begun after 1988 became much more expensive, corporate, and collective plans being less expensive. Obstetric, ambulatory, and dental care could be optional.

The vast expansion of the medical market in Brazil occurred in the period 1987/94 when there was a growth of 73.4% of the population covered, from 24.4 million to 42.3 million policyholders. This enormous increase happened in an environment when SUS was not fully implemented. Estimates suggest today a contingent of about 28% of the total population in Brazil as purchasers of health insurance plans [6].

Health expenditures in Brazil was R\$ 224.5 billion in 2008, meaning 8.4% of GDP. Hospital costs comprise around R\$ 33.3 billion, or 15% of that money. Thus, more than half of health care costs are paid directly by the individual or through his/her health care plan. Intensive Care costs are quite heterogeneous, but are responsible for 6–20% of hospital costs, being more important in the private or supplementary sector. Comparing to OECD's countries where government's health care expenditures comprise up to 70%, leaving only 30% to individuals and families, in Brazil this proportion is, respectively, 41.6% and 57.4% [6].

Intensive Care in Brazil

Intensive Care Medicine appeared in Brazil in the late 1960s. Physicians that came from abroad were interested in caring for hospitalized patients opened the first ICUs in few excellence centers. Its development followed a slow but continuous growth

in the 1970s. In 1980 the *Associação de Medicina Intensiva Brasileira* (AMIB) was created, and it was recognized as a distinct specialty by the *Associação Médica Brasileira* only in 2002.

The medical curriculum in Brazil has been strongly influenced by a focus in primary care, specially driven by successful experiences, especially from the Cuban health care system. Unfortunately some of these experiences were not adapted to an urban population, with health requirements different from other countries [7]. In contrast, the private sector has been strongly influenced by a hospital-based care, with all the consequences of this model, including very large ICUs, which are common.

After some time, we have seen changes in this scenario in the public sector, with the implementation of a national pre-hospital system (SAMU—*Serviço de Atendimento Móvel de Urgência*) in 2004 [8], and, more recently, with the creation of peripheral or micro-regional emergency units (UPA—*Unidade de Pronto Atendimento*) with national standardization [9]. Thus, the public health system now recognizes the need for resources in acute care, and this development has been changing practice, because more severely ill patients are arriving at hospitals, and intensive care units are an integral part of their treatment.

In the formal path to be an intensivist in Brazil, a physician, after 6 years in medical school, must have a 2- or 3-year prerequisite in anesthesiology or internal medicine or surgery followed by a 2-year fellowship in intensive care. Other possibilities are allowed, with no less time to be obtained and a board certification test is mandatory. During these 30 years AMIB certified 5,700 physicians in Brazil, but around 40% of them do not practice intensive care anymore (AMIB 2010, personal communication).

In 2009 AMIB did an ICU census and found 2,342 ICUs and 25,367 ICU beds in Brazil, with a relationship of 1.3 ICU beds per 10,000 habitants. The Brazilian Ministry of Health recommends a minimum of 1–3 ICU beds/10,000 Hab. The mean value described above is inside the recommended interval, albeit close to the inferior border. Almost half of the Brazilian states, most all of them in the North and Northeast regions, are below this lower limit [10].

The Agência Nacional de Vigilância Sanitária—ANVISA, Resolution #7/2010 states that every ICU has to have at least one intensivist in charge. Nevertheless, around 40% of the Brazilian ICUs do not have this physician working there. Most commonly, physician's work in Brazilian ICUs is structured in form of 12 h shifts, with intensivists covering or giving some support at daytime periods and weekends [10, 11].

Following ANVISA's Resolution #7/2010, the actual maximum number of patients per physician is 10. It is important to notice that the nurse to patient ratio is 1/8, the nurse–technician to patient rate is 1/2 and the physiotherapist to patient ratio is 1/10, covering 18 h per day [8]. We estimate that many small centers and those outside some regions cannot, or, are not, still complying with these legal definitions. Generally, physicians in public hospitals receive fixed salaries and those in the private sector work in a fee-for-service basis, receiving directly from health care plans. It is not uncommon to find physicians who work in two or three ICUs,

normally trying to benefit from the best—and suffering from the worst—aspects of each type of employment or job.

Recent changes deserve consideration in Brazil and most probably will have an impact in the present and near future of intensive care in Brazil. It may be difficult to be documented but we have the impression that the technological gap between the public and the private services are shortening, with better equipped ICUs in public hospitals. Another recent change is the new revised medical ethics code, published in 2010, which emphasizes the role of patient autonomy and palliative care, two very important points when discussing resource allocation [12].

There is much to be done. But looking back there is a feeling that much has already been done and the path is ready for those who want to move forward and improve our practice. We hope that equilibrium in political interests finally will be achieved and maintained, and the allocation of resources will be directed to population needs, eventually benefiting most.

References

1. Instituto Brasileiro de Geografia e Estatística. <http://www.ibge.gov.br/home/default.php>.
2. United Nations Human Development Reports. <http://hdr.undp.org/en/statistics/>.
3. Central Intelligence Agency. <https://www.cia.gov/library/publications/the-world-factbook/fields/2172.html>.
4. Wikipedia. http://en.wikipedia.org/wiki/Gini_coefficient.
5. Constituição Federal do Brasil, Título VIII, Capítulo II, Artigo 196, 1988.
6. ANDRADE, Mônica Viegas. Ensaio em economia da saúde. Tese de doutorado. Rio de Janeiro: EPGE-FGV, 2000.
7. RESOLUÇÃO CNE/CES Nº 4, DE 7 DE NOVEMBRO DE 2001. Diretrizes Curriculares Nacionais do Curso de Graduação em Medicina.
8. Brasil, Ministério da Saúde. Política Nacional de Atenção às Urgências, 3ª edição, 2004. http://bvsmms.saude.gov.br/bvs/publicacoes/politica_nacional_atencao_urgencias_3ed.pdf.
9. Brasil, Ministério da Saúde. PORTARIA Nº 1.601, DE 7 DE JULHO DE 2011.
10. Associação de Medicina Intensiva Brasileira. <http://www.amib.org.br/pdf/CensoAMIB2010.pdf>.
11. Agência Nacional de Vigilância Sanitária. http://bvsmms.saude.gov.br/bvs/saudelegis/anvisa/2010/res0007_24_02_2010.html.
12. Conselho Federal de Medicina. <http://www.portalmedico.org.br/novocodigo/index.asp>.

Assistive Technology

Interventions for Individuals with Severe/Profound and
Multiple Disabilities

Lancioni, G.; Sigafoos, J.; O'Reilly, M.F.; Singh, N.N.

2013, XIV, 182 p., Hardcover

ISBN: 978-1-4614-4228-8