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Focus

The Two Sides of Brazilian Healthcare

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Despite its many problems, Brazil's universal public health system represents an enormous achievement for Brazilian society. Brazil has not only managed to significantly improve access to healthcare, especially among the poorer inhabitants, but its system also represents a significant social and political commitment, by the government, and an effort to realize rights that are a key aspect of citizenship for millions of Brazilians. Nevertheless, health and social inequalities remain and more needs to be done.

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AT A GLANCE

- **Population 207.681 million**
  fifth largest in the world, representing nearly 3 % of global consumers

- **Political System - Federal Republic.** The federal presidential constitutional republic of Brazil is a union of 27 Federative Units (Unidades Federativas, UF): 26 states (estados) and one federal district (distrito federal), where the federal capital, Brasília, is located.

- Brazil is composed of five major regions - the North, Northeast, Southeast, South and Central-West.

- Largest Economic City - **São Paulo** (represents 10.7% of the GDP)

- **GDP (PPP) - $3.219 trillion** (2017 est.)

- **GDP per capita (PPP) - $15,500** (2017 est.)

- **Revenues - $726.6 billion** (2017 est.)

- Expenditures - **$749 billion** (2017 est.)

- Exports (2017 est.) - **$215.4 billion**

- **Main export partners** (2016) -
  China 21.8%, E.U. 16%, U.S. 12.3%, Argentina 8%, Japan 2-4%, other 39%

- Imports (2016 est.) - **$139.4 billion**
  Main import partners: E.U. 21.2%, China 18.1%, U.S. 16.5%, Argentina 6.2%, South Korea 3.4%, Other 35%

- **Leader among emerging markets** - A BRICS member, many multi-national companies consider Brazil as an essential market for truly global businesses

- **E-Commerce in Brazil** - has grown by more than 20 % over the past three years

- **The government of Brazil** - investing heavily in the implementation of electronic medical records

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Economic Profile - As of late 2010, Brazil's economy is the largest of Latin America, the second largest in the Americas (after the U.S.) and among the ten largest in the world. From 2000 to 2012, Brazil was one of the fastest-growing major economies in the world, with fast expanding business opportunities and an average annual GDP growth rate of over 5%, with its economy in 2012 surpassing that of the United Kingdom. However, its growth decelerated in 2013 and the country entered into a deep recession in 2014 . Per capita GDP decreased 4.4% in 2016 for a combined drop of almost 10% over two years. While unemployment stood at just 6.5% as recently as 2014, it ended 2017 above 13%. **From 2017, however, the economy started to recover again, with a 1% GDP growth in the first quarter. In the second quarter the economy grew 0.3% compared to the same period of the previous year, officially, but slowly, exiting the recession.** According to OECD forecasts, Brazil's GDP growth would pick up to 2.2% this year and 2. 4 % in 2019. Unemployment has also turned around falling by over a percentage point from its 14% peak earlier this year. Lower inflation and interest rates will further support a gradual economic recovery.

The long and deep recession seems to be over, but more needs to be done. **Brazil remains a highly unequal country, recent corruption allegations have revealed significant challenges in economic governance and the situation of its fiscal accounts is also challenging, with high and rising public debt.** Gross public debt has in fact increased by approximately 20 percentage points of GDP over the last 3 years and stands around 75% of GDP. In 2016, Brazil spent 16% of its budget on interest payments on government debt, which is held by investors, business and upper middle-class savers. This was more than on education and health (9%). According to the 2018 survey on Brazil, published by the OECD, interest payments were the second biggest outlay in the budget, beaten only by social benefits (35%), which were mostly pensions. Given that Brazil's pension system benefits disproportionately relatively better off public servants, Brazil's budget actively benefits the wealthy over the poor and leaves no money for investment. Without an urgent reform (expected by 2019), pension expenditure will more than double by 2060, leading to unsustainable fiscal dynamics. Improving the effectiveness of public spending, particularly public transfers, will be crucial for further social progress. At present, a large and rising share of social benefits is paid to households that are not poor, which reduces their impact on inequality and poverty. Public transfers to the corporate sector, which have increased markedly over recent years, also need adjustment. These transfers, often granted in the form of tax exemptions or subsidized lending, have not been associated with visible improvements in productivity or investment, but they benefitted primarily the more affluent, besides creating fertile ground for corruption and political kickbacks.

The OECD report looks at other distortions needing to be untangled. Among them, the high tax burden. Manufacturing companies in Brazil spend an average of nearly 2,000 hours a year preparing their taxes compared with 800 for Venezuela and less than 200 for the US. Furthermore, Brazil has the highest applied import tariffs of the countries listed in the report, about double the level of China and four times that of the US. Brazil has not gained new markets for its exports in recent years. In terms of imports and exports as a percentage of GDP Brazil is the least open country on the OECD's list, less even than Argentina. Lastly, a factor that increases inequality and costs in the economy is how much Brazilians overpay for consumer goods and services.

President Michel Temer, that took over from August 2016 as interim President after the impeachment of former President Dilma Rousseff, is now pursuing corrective macroeconomic, market-oriented policies to stabilize the economy; but the outcome of Brazil's October 2018 presidential election is uncertain, posing risks to its continuity. The proposed economic reforms aim to slow the growth of government spending and reduce barriers to foreign investment. Congress approved a landmark constitutional federal spending cap and is now debating complementary constitutional reforms to curb social security spending. Additional reforms to increase labor market flexibility and to rationalize Brazil's complex tax system are also on the agenda. International capital markets have recognized Temer administration efforts, lowering risk premiums significantly from 2015 peak levels and boosting the value of the *real*. Both portfolio and direct investors, however, remain sensitive to political uncertainties. Brazil has been taking steps to improve infrastructure and education, expand trade, and increase the presence of multinational businesses in the development of Brazil's huge oil reserves. Immense natural resources, a strong industrial base, a sizeable domestic market and a large and relatively diversified economy makes Brazil an attractive country for investors.

Health profile - With the creation of the National Health System (Sistema Único de Saúde – SUS) some 30 years ago, Brazil was one of the first and few countries outside the OECD

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(Organization for Economic Cooperation and Development) to integrate the goal of universal health coverage in its legislation, recognizing health as a right of citizens and a responsibility of government. The 1988 constitution, in fact, enshrined health as a citizens' right, requiring the state to provide universal and equal access to health services. **Its National Health System is based on decentralized universal access, with municipalities providing comprehensive and free healthcare to each individual in need (citizen or anyone legally residing in Brazil), with a public sector covering almost 75% of the population and an expanding private sector offering health services to the rest of the population.** The public sector is funded through a variety of taxes and social contributions collected by the three levels of government (federal, state and municipal). The states receive money from the federal government, while the municipalities receive funding from both the federal and state governments.

SUS provides healthcare through a decentralized network of clinics, hospitals and other establishments, as well as through contracts with private providers (subsidized by the federal government via the Social Security budget). SUS is also responsible for the coordination of the public sector. The private sector includes a system of insurance schemes known as Supplementary Health which is financed by employment-based or individually purchased private insurance.

The public and private components are thus distinct but interconnected, as people can use both, depending on ease of access or their ability to pay. The law states that "health assistance is open to private enterprise", evidencing the existence of two health sub-systems within Brazil. The SUS is the public face of the system and is characterized by public financing and public/private delivery. It also serves a portion of those covered by private health insurance. The SUS aims to provide universal and free at the point of delivery healthcare services, through two main lines of action: the Family Health Program *(Programa Saúde da Família),* where family health teams provide primary care and act as gatekeepers to determine access to more specialized and hospital-based services; and a network of public and SUS-contracted private clinics and hospitals which delivers secondary and tertiary care nationwide. The private health sector offers duplicate coverage for most healthcare services.

Through the creation of the SUS, Brazil laid the foundations for a better health system and contributed to improving the quality of life of its population. The many measures have led to huge health gains, with an infant mortality rate of about 14 per 1,000 live births, down from about 27 in 2000. Maternal mortality has also been cut in half since 1990. The average Brazilian only lived to about 66 in 1990; today, life expectancy is at 75. The SUS is cherished, by rich and poor Brazilians alike, as a protection against steep medical bills with Brazil having the lowest rate of catastrophic health expenditures (2.2 %) of nearly any other country in the region, achieving higher level of financial protection than other countries such as Chile, Mexico and even the U.S..

Brazil health indicators, comparison with other countries

Health Indicators (2015)	Brazil	Argentina	Germany	USA
Maternal mortality ratio (per 100 000 live births)	44	52	6	14
Neonatal mortality rate (per 1000 live births)	8.9	6.3	2.1	3.5
Under-five mortality rate (probability of dying by age 5 per 1000 live births)	16.4	12.5	3.7	6.5
Life expectancy at birth (both sexes)	75	76.3	81	79.3
Healthy life expectancy at birth (years), both sexes	65.5	67.6	71.3	69.1

Source: WHO

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The SUS triggered a fundamental restructuring of how the health system is governed; a process of decentralization and new arrangements for sharing of responsibilities across federal, state and municipal levels; as well as a gradual increase of public spending on health. **The increase in health spending was accompanied by an improved allocation of federal and state resources in favour of the poorest parts of the country and segments of the population.** This contributed to a significant improvement in access to primary healthcare services, which in turn has led to a reduction in avoidable mortality and hospital admissions from primary care sensitive conditions. Overall, in a twenty-year period, the number of primary care facilities increased from 2.2 per 10,000 inhabitants in 1990 to 3.6 in 2009, while the number of primary care consultations per person increased by 70 % during the same period. In large part, this reflected the introduction and expansion of the Family Health Program.

All three levels of government – federal, state and municipal – have worked to encourage the population to use and benefit from the health system through the Family Health Program and through the deployment of community health workers or *agentes de saúde* working with the poor. **Created in 1994, the Family Health Program – Brazil's main primary healthcare strategy – seeks to provide a full range of quality healthcare to families in their homes, at clinics and in hospitals.** Today, roughly 40,000 health centres are active in nearly all Brazil's 5,570 municipalities, covering well over 100 million people. A family health team includes a family physician, a nurse, a nurse assistant and five to seven community health workers; when expanded, it includes the oral healthcare team, with a dentist, a dental hygienist and a dental assistant. The Family Health Program has been an important factor in reducing child mortality and improving other health indicators, especially in the country's poorer North and Northeast regions. Even if long queues at hospital emergency departments, beds spilling into corridors, outdated and malfunctioning equipment and a scarcity of doctors and medicine in rural areas remain common complaints, Brazil's public health system has brought quality healthcare to millions of poorer inhabitants who were previously denied even basic care.

But several are the challenges. **First, notwithstanding heavy demand for healthcare services, the government has only modestly increased spending for SUS and federal healthcare spending is minimal at best, failing to meet ongoing needs.** Brazil spends on average 9 % of its GDP on healthcare (by comparison the U.S.'s 16-18 %) with less than 50% of health financing coming from public sources, one of the lowest shares in the OECD area. Competing with SUS, there is a vigorous market of private insurers and private providers, amounting to approximately 55 % of health financing: private health insurance covers more than 70 million people and generates revenues of more than 40% of the federal funding on healthcare, and direct out-of-pocket (OOP) expenses represent as much as one-third of total healthcare expenses. This mix of health financing makes the health system regressive: the lowest income decile, which accounts for 1% of the total country's income, is responsible for 1.8% of the total OOP expenditure, while the highest income, who have 46% of wealth, are responsible for only 37% of total OOP. Put differently, OOP represents 7% of family income for the poor, while only 3% for the richest, highlighting the difficulties of the public system to ensure quality access to underprivileged populations.

This quality gap between the public system and private providers also helps to explain a soaring market for private health insurance (an increase of more than 50% in the last decade). On top of this, public health policies have helped the development and maintenance of this parallel private market: federal government tax exemptions to private expenses with healthcare have doubled in the last decade and now account to as much as a quarter of total public financing with healthcare, depriving the public system from important financing that could be directed towards a higher investment in the public system around the country.

Second, SUS hospitals and the Family Health Program have often had a difficult time treating individuals in hard to reach areas, such as the Amazonian region while individuals often have to wait a long period of time for prevention and treatment services. Government-funded hospitals and clinics offer quality medical services but often time there is shortage of essential infrastructure, such as beds (only about 2 hospital beds for every 1,000 people), X-ray machines. **On the contrary, the private system comes with shorter wait times, high quality and well-equipped facilities and, even if high-earners tend to visit private doctors, they also turn to the public system to get costly procedures.** On this regard, people with private insurance report having better access to preventive and curative services through their insurance, but often receive vaccines, high-cost services and complex procedures such as transplants through the SUS, crowding out people who have no choice but to use the SUS.

There are some 6,761 hospitals in Brazil. Of these hospitals, 70 % are private/not for profit hospitals and over 50% of hospitals are found in 5 states: São Paulo, Minas Gerais, Bahia, Rio de Janeiro and Parana. The public hospital infrastructure

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required hospitals to be spread over a territory of 8,516 million square kilometers, as such the public hospital infrastructure relies on a vast network of small hospitals where over 55% of public hospitals have less than 50 beds. Brazil is one of the leading medical tourism destinations in South America and has some of the highest quality hospitals in Latin America, attracting patients from neighbouring countries, mostly for plastic surgery, cancer and cardiovascular treatment.

What's more, there is a high level of inequality in medical technology and infrastructure, with larger, more affluent municipalities able to provide better technological equipment and medical care. SUS funding is split between the federal, state and municipal governments, creating disparities and misuse of public funds in the system. Brazilians in the south tend to live better, healthier lives than their poorer northern countrymen. Infant mortality rate of the north is twice as high as that of the south. The richest fifth of Brazil's population is twice as likely to receive prenatal care as the poorest fifth.

And finally, there is a chronic shortage of doctors and nurses, especially in rural areas. Many hospitals are also poorly managed, lacking autonomy from state governing boards.

Over the years, within the *"Mais Medicos" (More Doctors) program,* the government imported doctors from abroad, primarily Cuba, to serve the poor and those in inadequately served rural areas. Mais Medicos participants provide primary care and are expected to serve for three years, while Brazil expands long-term plans to put more students in medical school. Brazil has between 360,000 – 475,000 active doctors (numbers vary according to different sources), of which over half are specialists. Most doctors are concentrated in the richest areas: the state of Rio de Janeiro has 3.44 doctors per 1,000 residents, compared with less than one per 1,000 people in Acre, far away on the Bolivian and Peruvian borders or 0.58 in the poor north-eastern area of Maranhao.

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	Brazil	Germany	USA
Skilled health professionals density (per 10 000 population), 2005–2015:	93.0	176.0	117.8
Physicians density (per 10 000 population), 2007-2013:	18.9	38.9	24.5
Radiotherapy units per million population (public sector only), 2013:	1.74	6.4	12.37 (not specified if data are delivered for public or private sector)

Sources: WHO, World Health Statistics

The public health system will need to continue to develop – improving the quality and coordination of care, continuing the expansion of primary care coverage, addressing the significant barriers to accessing specialized and high-complexity care and reducing the relatively high level of dependence on private spending to finance the health system. These challenges are expected to become more pressing in the future, as the Brazilian population ages and the national health system needs to face the double burden of infectious diseases and the increased risk of non-communicable diseases such as cancer, cardiovascular disease as well as

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trauma resulting from violence and accidents, obesity and diabetes. Nearly half of Brazilians are overweight (46.6 % in 2013 up from 42.7 % in 2006, according to figures released by the Ministry of Health) and about 15 % are obese. Among the reasons for the rapid shift from malnutrition to obesity is Brazil's newish middle class—36 million people who climbed out of extreme poverty in the past few decades, now struggling with non-communicable diseases, being junk food the first thing that comes with economic development.

	Brazil	Argentina	Germany	USA
Mortality due to non-communicable diseases (Probability of dying from any of cardiovascular disease, cancer, diabetes, chronic respiratory disease between age 30 and exact age 70 (%), 2015)	16.9	17.1	12.0	13.6
Road traffic mortality rate (per 100 000 population), 2013	23.4	16.3	4.3	10.6

Sources: WHO

Industry Profile - In spite of political uncertainty, the healthcare industry is expected to grow. To create a more dynamic business environment, Brazil would need to streamline public sector governance, both at the federal and sub-federal levels, with a view to reforming the notoriously complex tax system, ending fiscal competition among federative states; modernizing the outdated labour regime; cutting red tape and delays (e.g. for starting a business and for processing intellectual property rights applications); and increasing transparency, including in the operations of enterprises with public participation. **The Government of Brazil is in fact the nation's largest buyer of healthcare goods and services but navigating the government procurement process is challenging.** Exporters may find themselves at a competitive disadvantage if they do not have a significant in-country presence – whether via established partnerships with Brazilian entities or some type of Brazilian subsidiary.

There are around 4,000 manufacturers of medical and dental products in Brazil and over 10,000 distributors. Many of the largest multinational companies have set up manufacturing facilities in Brazil to reduce costs and to be more competitive within the public system. **For most small and medium-sized exporters, it is essential to work through a qualified representative or distributor when developing new business.** Brazil's business culture relies heavily upon the development of strong personal relationships and requires intimate knowledge of the local business environment. In addition to high tariffs, there is a complex legal system and customs procedures. In 2016, imports of medical products and devices have suffered a 16 % reduction from previous year but are expected to grow in the near future. The value added tax on sales and services (ICMS) exemption is expected to continue for a few products until September 2019. A few notable growth areas were in dental products, where imports increased 10.6 % and in imaging diagnostics, where imports increased by 32.4 %.

ANVISA, the Brazilian Health Regulatory Agency, monitors the price of medical products and pharmaceuticals and regulates commercialization and registration. Foreign companies must have a Brazilian representative or establish a local office to submit the registration of products to ANVISA. Other government bodies involved in the introduction of new medical products are the National Institute of Metrology, Quality and Technology (INMETRO), certifying electromedical devices and implants and the National Commission for Incorporation of Technologies in the Brazilian public healthcare system (CONITEC) which incorporates new medical technologies in the public health system.

For most small and medium-sized exporters, it is essential to work through a qualified representative or distributor when developing new business.

Brazil is ranked among the top ten largest pharmaceutical markets in the world, accounting for 3.5 % share of the world market. While Brazil hosts manufacturing plants of some of the largest international pharmaceutical companies, local industries are mostly focused on the production of generic and similar brand medicines. Generics comprise 29 % of Brazilian's pharmaceutical market and to expand the access of the population to drugs, incentives have been offered for marketing generic products, which cost an average of 40% less than brand-name products. Also, public laboratories supply chronic disease medicines that are distributed for free or at discounted prices to the public. Brazil aggressively negotiates drug prices to help keep prescriptions cheap and available.

More info on registration of medical products at ANVISA: *http://portal.anvisa.gov.br/registros-e-autorizacoes/produtos-para-a-saude/produtos/registro and http://portal.anvisa.gov.br/exporting-to-brazil*

Oral health profile - Oral healthcare follows the trend of general health. It is incorporated within the Public Health System (SUS) with the aim of universal coverage but with lower priority in public policies and public financing. A gap exists between what is officially covered and what is in fact available in practice.

Public oral health coverage reaches less than 40% of the population with a substantial proportion of the population covered neither by public sources nor by private dental insurance. The national policy on oral health, also known as Smiling Brazil ("Brasil Sorridente"), was implemented in 2004 with the aim to reorganize public oral health and provide primary oral healthcare within the Family Health Program (Programa Saúde da Família) and specialized dental procedures through the creation of the Dental Specialty Centers (Centros de Especialidades Odontológicas – CEOs). Oral health was designated as 1 of the 4 priority areas of the SUS, with the objective to achieve the integrality of care envisaged at its creation. "Smiling Brazil" increased federal funds to states and municipalities to provide comprehensive and universal access; furthermore, its financial support also increased the number of municipalities with a fluoridated water system, however, despite its efforts, the magnitude of inequality in Brazil remains and public investment in oral health remains low and not sufficient to address social inequalities in access to oral healthcare.

The Brazilian population covered by oral healthcare teams, within primary care, rose from 15.2% to 37% between 2002 and 2012 with roughly 22,000 teams in 4,900 municipalities. As for the CEOs

there are more than 900 centers all over the country. To access them, people must first be assessed by an oral healthcare team, which will provide primary oral healthcare and if necessary will refer the patient to the nearest center. Services covered by public sources include all procedures considered as primary oral healthcare (examination, diagnosis, preventive care, sealants, scale and polish, fillings, extractions and urgent care) and also some specialized procedures delivered at the CEOs, such as periodontal surgery, endodontic treatment, minor oral surgeries, diagnosis and treatment of oral lesions, dentures and treatment to disabled patients. Crowns and bridges are not covered.

As in general healthcare, coverage for oral healthcare in Brazil is duplicated as people who have private insurance are not excluded from public coverage. Private dental insurance covers around 9.5% of the population and insurance companies must cover a set of dental benefits mandated by the regulatory agency ANS, including primary and specialized procedures. They can also offer optional benefits, which they have no obligation to cover. Many companies have cost-control mechanisms for some procedures, such as

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preauthorization of benefits and cost sharing. **In consideration of what said, the Brazilian oral healthcare system is mainly privately financed, even after the implementation of "Smiling Brazil". 2010 estimates suggest that private dental insurance finances around 25.7% of total oral healthcare expenditures, out-of-pocket payments account for about 63.9% and the SUS finances only 10.4% of total oral healthcare expenditures.** Individual characteristics (low levels of education) and regional differences (low levels of economic development) maybe associated with poorer access to oral healthcare services. While the supply of oral healthcare services by the SUS has increased, it appears to be still largely targeted to younger and school-age populations.

There are five recognized oral healthcare professions in Brazil: dentist, dental hygienist, dental assistant, dental technician and dental technician assistant. **As roughly 9,000 students graduate each year, the number of dentists becomes comparable to 12% of all dental professionals in the world. The Brazilian oversupply of dentists is associated with an excess of dental schools and graduates but it has not resulted in better access to oral healthcare, given the unequal geographic distribution of professionals.** Such an unequal distribution is related to differences between the more and less developed regions of the nation. For example, in the northern region there are 0.27 dentists per 1,000 population and in the south-eastern region this number increases to 1.25 dentists per 1,000 population.

Comparative framework of the oral healthcare systems, Brazil and selected countries, latest data available

INDICATOR	Brazil	Canada	France	U.K.	USA
Coverage for oral healthcare					
% of population covered by public sources	37.0	5.5	100.0	100.0	5.0
% of population covered by private dental insurance	9.5	62.6	95.0	11.8	59.5
Financing					
Total oral healthcare expenditure (TOHCE), 2010 (billion US$)	3.96	10.55	11.39	8.73	108.44
TOHCE as % of GDP, 2010	0.17	0.80	0.50	0.60	0.70
Per capita TOHCE at average exchange rate, 2010 (US$)	20.75	309.40	175.70	141.23	349.00
TOHCE as % of total healthcare expenditure	1.8	7.4	4.6	4.1	4.0
Public oral healthcare expenditure as % of TOHCE, 2010	10.4	5.3	35.6	46.0	9.3
Private dental insurance as % of TOHCE, 2010	25.7	52.1	38.5	13.4	48.6
Out-of-pocket payments as % of TOHCE, 2010	63.9	42.6	25.5	40.6	41.6

Source: http://ncohr-rcrsb.ca/knowledge-sharing/working-paper series/content/garbinneumann.pdf

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Public oral healthcare is usually provided in local community settings and all oral healthcare providers working in the public sector are part-time or full-time salaried employees of the municipality where they are working. On the other hand, private oral healthcare is delivered in independent private dental offices, where dentists can work on their own or in a group practice. These practitioners can earn their living entirely through fees paid directly by their patients and/or by dental plans. They can also work as part-time employees in the public sector.

In the 2010 Brazil National Oral Health Survey, the most significant results include an important reduction in dental caries compared to the 2003 survey. At 12 years, the mean DMFT (mean number of decayed, missing or filled teeth) was 2.1 compared to 2.8 in 2003. For the component of untreated (decayed) teeth, the decrease was 29% (from 1.7 to 1.2) and the proportion of "caries-free" children (DMFT = 0) increased from 31% to 44% in 2010. In adults aged 35-44 years, the mean DMFT in 2003 was 20.1, decreasing to 16.3. **However, the survey identified persistent issues including large regional differences in the prevalence of dental diseases; 80% of decayed deciduous (primary) teeth are still untreated; and despite the decreasing need for dental prostheses in adolescents and adults, there are still significant needs in the elderly, as only 7.3% of them do not need prostheses.**

In terms of access to and utilization of oral health care services, a 2008 survey showed a decrease in the proportion of subjects that had never visited a dentist, from 18.7% (1998) to 11.9% of the population. Nearly 40% of Brazilians made a dental visit in the previous 12 months, but the number increases significantly among the higher income group (67.2%) comparing to the lower income group (28.5%). **The main reason for not obtaining dental care was the waiting times to get an appointment within the SUS due to a shortage of dentists, which can reflect cost barriers to access private dental services.** Data also showed that the SUS was responsible for delivering 29.3% of all oral healthcare services at that time.

Self-reported access to and utilization of oral healthcare services was also explored in 2009. Data were collected from a sample of the Brazilian adult population in Brazil's state capitals and showed that 15.4% of Brazilians who felt they needed oral health care services in the 12 months before the survey did not receive them. Lack of access to oral healthcare was more frequent among women, young adults, less educated individuals and blacks.

Dentistry personnel in Brazil, latest data available.

	Brazil
Number of practicing dentists	Between 256,889 - 290,000
Dentist/1000 population ratio	1.4
Number of dental hygienists	16,033
Number of dental assistants	96,143
Number of dental technicians	20,405
Number of dental technician assistants	4,818
Regulation level for oral healthcare providers	Federal

Sources: http://ncohr-rcrsb.ca/knowledge-sharing/working-paper-series/content/garbinneumann.pdf /

Oral Health Outcomes

Average number of DMFT at age 12	2.1
% of individuals who visited a dentist within the previous 12 months	40.2
% of individuals who felt they needed oral health care services but did not receive them in the previous 12 months.	15.2

Source: http://ncohr-rcrsb.ca/knowledge-sharing/working-paper-series/content/garbinneumann.pdf

ORAL HEALTH, COMPARATIVE DATA

SEVERE CHRONIC PERIODONTITIS
Estimates of average prevalence among those 15 years or older (2010)
Brazil - more than 15.0%
Germany -10.1%-15.0%
US, Canada, France, UK - 10% or less

ORAL CANCER
Incidence per 100,000 population of oral and lip cancer among those 15 years or older (2012 estimates)
US, France, Germany - 5.0-6.9
Brazil, Canada, UK - 2.5-4.9

DENTAL SCOOLS PER COUNTRY
Brazil, U.S. - 50 or more
Canada, France, Germany, UK - 10-49

PUBLICATIONS
Papers published on dental research per country
US - 8,661
Brazil - 4,527
England - 2,900
Germany 2,769

Source: FDI World Health Atlas, 2015

Largest Medical and Dental Latin America international trade exhibitions, both held in Sao Paulo:

• Hospitalar
22-25 May 2018
www.hospitalar.com/en/the-fair/general-information-eng
(Medical)

• Congresso Internacional de Odontologia
30 Jan. – 2 Feb. 2019
Organized by the Sao Paulo Association of Dental Surgeons
www.ciosp.com.br/ (Dental)

Among main sources:

-Extracts from "The hallmark of the Brazilian National Health System (SUS)", Magnus Lindelow, Sector Leader for Human Development for the World Bank. For full article: Brazil.http://www.worldbank.org/en/news/opinion/2013/12/20/brazil-sus-unified-public-healthcare-system-new-study
-Extract from "Exporting to Brazil – Market Overview" by Export.gov.The U.S. Department of Commerce's International Trade Administration collaborates with 19 U.S. Government agencies to bring Export.gov. For full overview on Brazil: https://www.export.gov/article?series=a0pt0000000PAtOAAW&type=Country_Commercial__kav
*-Extract from "A comparative analysis of oral health care systems in the United States, United Kingdom, France, Canada and Brazil" By Daniela Garbin Neumann*1 and and Carlos Quiñonez2. Garbin Neumann NCOHR Working Papers Series 2014, 1:2. http://ncohr-rcrsb.ca/knowledge-sharing/working-paper-series/content/garbinneumann.pdf*
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- Extract from "The Brazilian Health System: A tale of two countries", by Pedro Ramos, a medical doctor and holds a Master in Health Management and Economics from Porto University, Portugal. He is currently working as Assistant Director at the Physician-in-Chief Office in a Brazilian hospital. For full report: http://ghnetwork.org/article/the-brazilian-health-system-a-tale-of-two-countries/
- "Flawed but fair: Brazil's health system reaches out to the poor" by WHO (World Health Organization). For full text: http://www.who.int/bulletin/volumes/86/4/08-030408/en/
-Extract from "In Brazil, health care is a right" by Eduardo J. Gomez, special to CNN. Full article at: https://edition.cnn.com/2012/07/13/opinion/gomez-brazil-health-care/index.html
- "What the U.S. Can Learn from Brazil's Healthcare Mess", by Olga Khazan, staff write at The Atlantic. Full article at: https://www.theatlantic.com/health/archive/2014/05/the-struggle-for-universal-health-care/361854/
-Hospitalar website: http://www.hospitalar.com/en/the-fair/health-sector
-"The Health System of Brazil" https://www.ncbi.nlm.nih.gov/pubmed/21877078
- FDI World Health Atlas. 2015
-WHO data from: http://apps.who.int/gho/data/node.country.country-BRA?lang=en
http://apps.who.int/gho/data/node.main.688?lang=en
-WHO, World Health Statistics 2017 and World Health Statistics 2015
- Financial Times, March 2018 https://www.ft.com/content/f3d2cd90-1e46-11e8-aaca-4574d7dabfb6
-Extracts from "Towards a more prosperous and inclusive Brazil" by Jens Arnold and Alberto Gonzalez Pandiella, OECD, for full article: https://oecdecoscope.wordpress.com/2018/02/28/towards-a-more-prosperous-and-inclusive-brazil/
-Central Intelligence Unit: https://www.cia.gov/library/publications/resources/the-world-factbook/geos/br.html
https://www.cia.gov/library/publications/resources/the-world-factbook/geos/br.html

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