

Industry production and retail sales

According to IBGE's Monthly Industrial Survey on Physical Production (PIM-PF, the acronym in Portuguese), industrial production of instruments and materials for medical and dentistry application as well as optical supplies decreased by 14.9% in December 2015 as compared to the same month in 2014. Increment over 12 months amounted to 0.5%. Retail sales of pharmaceutical, medical and orthopedic supplies, according to IBGE's Monthly Commerce Survey, grew by 3.1% in December 2015, versus December 2014 and 3.0% within the 12-month period.

The apparent consumption index for MedTech - calculated by Websetorial for ABIIS - with purpose to reflect general behavior of the Brazilian market towards medical devices, showed the following figures: in December 2015 compared to December 2014, the drop totaled 16.8%. And also in the 12-month period, it fell 9.4%.

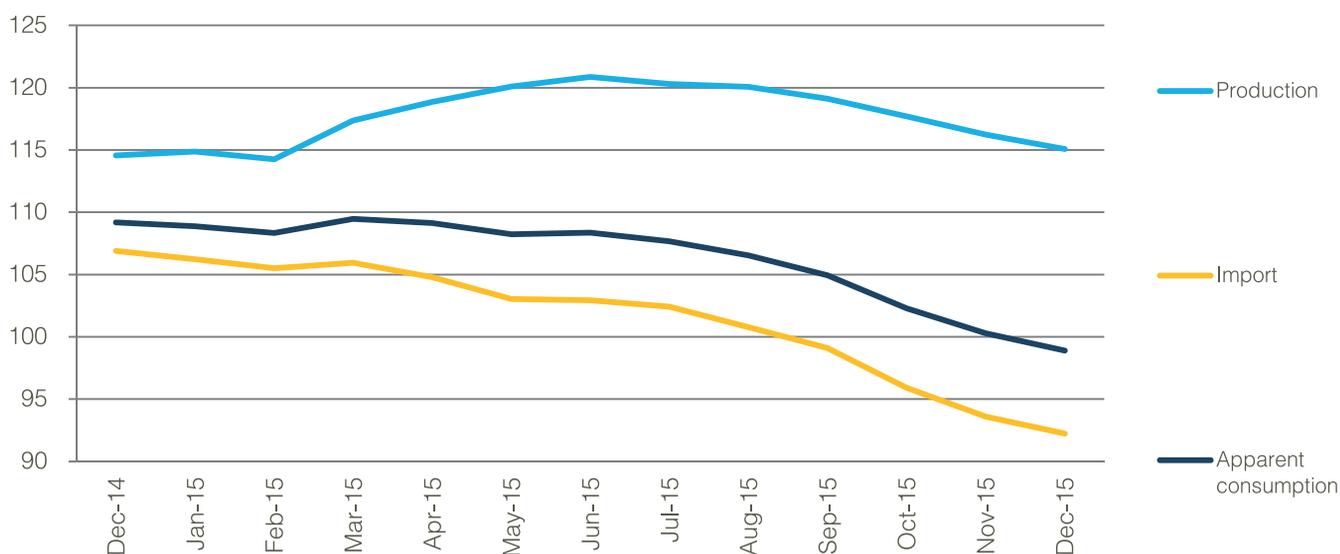
Table 01: Production and sales performance
 Percentage variation | January-December 2015

Segments	Percentage variation (%)	
	Dec15/ Dec14	2015/ 2014
Industry production		
Instruments and materials for medical and dentistry application and optical supplies	-14.9	0.5
Retail sales		
Pharmaceutical, medical and orthopedic supplies	3.1	3.0
Apparent consumption index		
Medical devices - MedTech⁽¹⁾	-16.8	-9.4
In vitro diagnostics – IVD	-14.0	-7.3
Prosthetics and implants – OPME	-23.4	-9.6

Source: PIM-PF/IBGE and PMC/IBGE | Development: Websetorial

Chart 01: Production, sales and apparent consumption

In index number | December 2014 to December 2015



Source: PIM-PF/IBGE and Aliceweb/ SECEX | Development: Websetorial

(1) MedTech - Medical devices at large, or medical technologies, including materials and equipment for medicine and diagnosis, in vitro diagnostics (IVD), prosthetics and implants (OPME).

Employment performance in the industry

Between January and December 2015, according to data by CAGED [General Employed and Unemployed People Register] of the Ministry of Labor and Social Security, 3,004 spots were closed in industrial and commercial activities of the Medical devices (MedTech) industry, totaling 135,572 workers in the industry, though figures do not include employees in additional diagnostic testing and therapeutic services. The number of workers employed in the

sector decreased by 2.2% from January to December 2015 compared to the same period in the previous year. Segments “instruments and materials for medical and dentistry application and optical supplies” stood out with occupation decreased by 5.4% in the period at issue. Elimination of 1,733 jobs positions in electro-medical and electro-therapeutic apparatus and irradiation equipment industry also stood out, as it corresponds to 2.9% in this activity.

Table 02: Employment evolution in the industry

In numbers and percentage variation | January-December 2015

Segments	2015	2014	Recruitment balance	Percentage variation (%)
	December	December		
	A	B	A - B	A/ B -1
Employment				
Industry of instruments and materials for medical and dentistry application and optical supplies	5,277	5,577	-300	-5.4
Industry of electro-medical and electro-therapeutic devices and irradiation equipment	57,164	58,897	-1,733	-2.9
Wholesale market of instruments and materials for medical, surgical, orthopedic and dental application	40,638	41,080	-442	-1.1
Wholesale market of machines, apparatus and equipment for dental-medical-hospital application	10,634	10,702	-68	-0.6
Retail market of medical and orthopedic supplies	21,859	22,320	-461	-2.1
Total ABIIS	135,572	138,576	-3,004	-2.2
Diagnostic testing and therapeutic supplementation services	228,620	226,010	2,610	1.2

Source: Caged/ MTE and RAIS 2014 | Development: Websetorial

Prices of healthcare products

When compared to the previous year, 2015 prices of orthopedic supplies increased by 25.1% (net of inflation measured by Brazilian index IPCA [Consumer Price Index-Broad]), which reached the mark of 10.7% over the previous year. Price increment related to hospital admissions and surgeries (10.4%), laboratory tests (5.9%) and radiography (4.0%) did not exceed the IPCA variation in the period.

Price increment in orthopedic products is probably a consequence of exchange variation that affected many imported products, as the real was depreciated by 48.2% over the same period, according to Funcex (Foreign Trade Studies Center Foundation).

Table 03: Product prices

Percentage variation | January-December 2015

Segments	Percentage variation (%)	
	Monthly	12 months
Orthopedic supplies	-1.6	25.1
Laboratory tests	0.3	5.9
Hospital admittances and surgeries	1.3	10.4
Radiography	0.5	4.0
IPCA	1.0	10.7
Exchange rate	2.5	46.7

Source: IBGE and IpeaData | Development: Websetorial

International Trade in the industry

In 2015, total exports of MedTech amounted to US\$ 5.1 billion, that is, a 13.7% decline in relation to 2014. In that same period, imports were reduced for almost all product groups, except for dentistry equipment. When comparing December 2015 and 2014, the drop in Brazilian imports of DMAs products reached 16.6%, with reductions in almost all segments, except, again, for dentistry equipment, with an increase of 10.6% and imaging equipment, with 32.4%.

Exports in the industry reached US\$ 678.5 million in 2015, an increase by 2.38% over the previous year.



Table 04: Brazilian imports in product groups

In millions of dollars and percentage variation | January-December 2015

Segments	2015		2014		Percentage variation (%)	
	December	12 months	December	12 months	Monthly	12 months
Breakdown by entity						
ABIIS	375	5,088	449	5,896	-16.6	-13.7
ABRAIDI	95	1,511	135	1,817	-29.8	-16.8
CBDL	185	2,293	207	2,511	-10.8	-8.7
Breakdown by product						
Medical devices	83	1,481	132	1,758	-37.1	-15.7
Materials and supplies	53	883	75	1,009	-28.7	-12.5
Prosthetics, implants, parts and devices	30	598	57	748	-48.0	-20.0
Medical Equipment	150	1,943	168	2,363	-11.1	-17.8
Dentistry equipment	3	39	3	39	10.6	0.0
Other hospital equipment, including laser	62	921	74	1,079	-15.4	-14.7
Imaging equipment and their inputs	44	445	33	535	32.4	-16.7
Laboratory Equipment	41	538	59	710	-31.1	-24.3
In vitro	140	1,619	146	1,715	-4.6	-5.6
Reagents	140	1,619	146	1,715	-4.6	-5.6
Furniture	3	45	3	61	-12.5	-26.5
Furniture	3	45	3	61	-12.5	-26.5

Source: Aliceweb/ SECEX | Development: Websetorial

International Trade in the industry

Brazilian imports of medical devices

by port: In 2015, Guarulhos Airport in São Paulo received 24% of MedTech imports, an aggregate of US\$ 1.2 billion. Total weight amounted to 4000 tons of products, which accounted for 4% of total imports, an average price of R\$ 301.50 US\$/kg. Campinas Airport received 22% of imports (US\$ 1.142 billion) or 6.6 tons, corresponding to 5% of the total, an average price of 173.03 US\$/kg. Between 2014 and 2015, MedTech imports via Guarulhos declined 8.4% (in value) while Campinas Airport faced a 14.6% drop in imports.

Table 05: MedTech imports by port

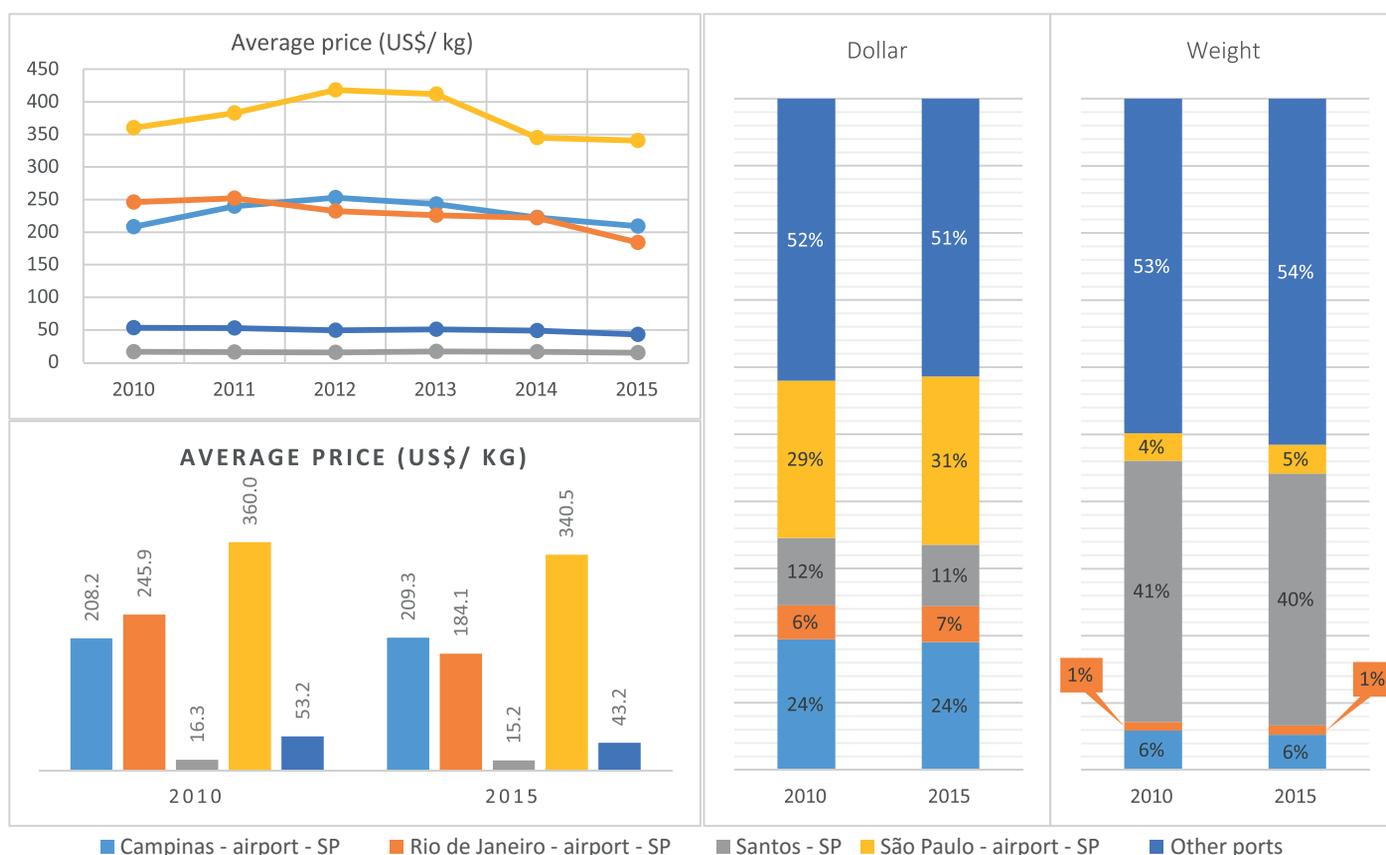
In dollars and tons | January-December 2015

Imports by port	2010	2011	2012	2013	2014	2015
In millions of dollars						
Campinas – airport - SP	1,058	1,159	1,235	1,348	1,337	1,142
Rio de Janeiro – airport - RJ	265	349	361	436	434	380
Santos - SP	592	637	680	723	740	611
São Paulo – airport - SP	1,051	1,364	1,489	1,485	1,316	1,206
Other ports	2,576	2,836	2,987	3,345	3,407	2,890
Total	4,483	5,186	5,516	5,989	5,896	5,088
In thousand tons						
Campinas – airport - SP	5.3	5.5	5.4	6.1	6.8	6.6
Rio de Janeiro – airport - RJ	1.1	1.4	1.6	1.9	1.9	2.0
Santos - SP	36.9	38.9	42.8	40.1	42.4	36.9
São Paulo – airport - SP	3.3	4.0	4.3	4.2	4.2	4.0
Other ports	66.4	68.3	80.1	91.5	93.3	90.8
Total	107.8	112.6	128.8	137.7	141.8	133.6

Source: Aliceweb/ SECEX | Development: Websetorial

Chart 02: Brazilian imports of MedTech by port

| Between 2010 and 2015



Source: Aliceweb/ SECEX | Development: Websetorial

Prospects for the industry

PUBLIC HEALTH

Cuts in budget and social security spending for 2016:

Public health in Brazil is on the verge of a collapse. According to the Brazilian Ministry of Health, funding for the sector will not be sufficient and, according to allocation legislation, resources allocated to health will be exhausted by September 2016.

Brazil's tax effort forecast for 2016 is R\$ 71.7 billion, which corresponds to 1.15% of GDP, according to preliminary estimates. Expenditures will be reduced by R\$ 26 billion, R\$ 3.8 billion of which will be cut from discretionary spending on health. However, according to the government, spending cut-backs that will impact construction of basic health units and cisterns will be restored by means of additional legislation negotiated in the Congress.

Public health funding: Additionally, two issues have also contributed for reduction of public health funds: in income drop and court decisions that compel States and Cities to pay for medication and treatments.

Court ruling has caused expenditure to exceed R\$ 1 billion in 2015 and there are still 400,000 lawsuits pending on the subject. According to the Minister of Health, Marcelo Castro, Ministry spending stemming from court decisions have increased a hundredfold over the past nine years. As these amounts are taken from the health budget, rise in spending could threaten sustainability of the Unified Health System (SUS). States' funds have also been affected, as some judges require local governments to fulfil medical prescriptions immediately, under penalty of local administrators being arrested.



This is a complex issue, considering that decisions have to be fast because, in some cases, delay in treatment might lead to patient's death.

In the light of the three factors described: budget cuts, income drop and court ruling, former Minister of Health, Arthur Chioro, believes that the system could collapse, in which case, UPAs, SAMUs, hospitals, emergency rooms, transplants centers, hemodialysis services and clinical analysis would not have funds to operate.

The problem, according to the former minister, is structural underfunding, as the system is still undergoing supply expansion process, with incorporation of new technologies and changes in the epidemiological profile, which put extra burden on the health system and have significant impact on costs.

Threat of EC 86/2015 on SUS: A recent amendment to EC 86/2015 brings major challenges to financing of the Unified Health System. The new rule has amended percentage allocation of funds to federal entities for health purposes since the second semester of 2014.

In view of the EC 86/2015, the executive branch can still enforce fund-allocation legislation up to the limit of 1.2% of the current net revenue realized in the previous year. But all government health services, which used to be funded by some share of royalties and the special participation of the Union, will be henceforward computed for purposes of compliance with the new mandatory minimum stipulated under the amendment. Therefore, such amendment eliminates the possibility of further resources being allocated to health, by means of supplementary law, since the constitution dictates the spending limit. For 2016, with the new EC 86, forecast is that 13.2% of current gross revenues from government will be allocated to health, incrementally, and that the maximum of 15% will only be reached by 2020.

Accordingly, the amount allocated to health will be less than the rising costs of the system, given that there is no prospect of recovery of economic activity in the short term and, consequently, public revenues will face real fall in the coming years. Thus, the minimum amounts invested in SUS will be reduced at the same proportions. To aggravate this scenario, the number of people who resort to SUS will grow during this period. Economic downturn and rise of unemployment rates will increase demand for public services in Brazil, as most beneficiaries of health care plans who become unemployed will lose their corporate health insurance.

Prospects for the industry

Supply of doctors: The number of doctors per thousand people in Brazil has increased in the past five years; however, it still remains below what is recommended by the Ministry of Health (WHO). In 2010, the rate was 1.95 doctors per thousand people. In 2015, the ratio reached 2.11, when the ideal proportion, according to the Ministry of Health, would be 2.5 to ensure adequate assistance to the population. By region, the equation described is even more unequal. In São Paulo, for instance, there are 2.75 doctors per thousand people, but in the North this indicator falls to 1.09. Most doctors are in the cities (55.2%) and only 23.8% are in rural areas.

A study carried out by the School of Medicine of the University of São Paulo (USP), in partnership with the Federal Council of Medicine (CFM) and the Regional Council of Medicine of São Paulo (Cremesp), points out that patients with healthcare insurance have three times the number of doctors available to users of the public network.

The public health system serves nearly 150 million people, while private health insurance serves 50 million. The number of doctors working both in the public network and for private plans is almost the same, since 78.4% of doctors have links with the private sector and 73.1% with the public network, which indicates that many operate in both sectors.

PRIVATE HEALTH

Funding of supplementary health insurance: Due to costs, Healthcare insurance is presently a hard asset to acquire, even though it is the third most wanted benefit by the population, behind education and housing

only. Health has become one of the most expensive benefits provided by companies and represents about 12% of the payroll of a company.

Supplemental health costs are growing at a rate almost twice that of inflation. As a result, buyers, both individuals and companies, are within the limits of their economic capacity. This is a major challenge to be faced by the industry.

Revenues are also falling. Corporate health insurance plans represent the largest share of supplementary health beneficiaries market, about 67%. As the economic cycle impacts the companies and raises unemployment, it will consequently reduce the number of beneficiaries. Therefore, revenues from beneficiaries will also cease.

Private health insurance companies' costs will jump over the next 15 years, from nearly R\$ 106 billion per year to R\$ 283 billion, with huge impact on the entire supplementary private health system, according to projections of the Institute of Supplementary Health Care Studies (IESS).

According to the IESS, Brazilian de-

mographic change triggers this sudden cost increment. The population is not only aging, but living longer, and experiencing the setbacks that longevity tends to bring to health. The industry costs are subject to a real escalation as the population ages. A beneficiary at the age 18, for example, costs about R\$ 1000 per year while accounts for the elderly reach R\$ 1000 per month. In the light of that, companies should review management, seek efficiency gains and to rethink the type of service offered.

The first supplementary health care forum, Fenasaúde, held on 24 and 25 November 2015, ended with some recommendations and goals defined to address the key challenges that impact the industry.

An alternative considered to control costs would be the creation of VGBL Health, a pension plan to pay health care after retirement. According to the model proposed, companies and employees would pay 10% of the health plan and, with such co-payment the user's healthcare plan would be guaranteed for 20 years.



Prospects for the industry

According to the IBGE, Brazilian population around 60 years old currently represents 10% of the total population of the country; such percentage will grow to 30% in 2050. There will be about 65 million seniors then. Hence, implementation of the VGBL would be an alternative to not let this population underserved.

Offer of health insurance plans with deductibles would complement the VGBL solution. According to such plan, medical expenses up to a certain limit would be the beneficiary's responsibility and, after that, of HMOs (Health Medical Organizations). For example, with a deductible of up to R\$ 5 thousand per year per household, monthly cost per capita would go from R\$ 417.00 to R\$ 238.00, down 43%. Another advantage is that the method also contributes to more responsible use of medical services.

Creation of plans with regional adaptations was also one of the proposals, through which some regional regulation would be created, with a system that rescued the concept of primary care. Based on it, beneficiaries would first be seen by a generalist, who would send him/her, or not, to the network, thus reducing waste and increasing care efficiency.

Prospects indicate that if in 2016 inflation remains high, with loss of real income and a high unemployment rate, this scenario may become even more complex, causing the industry's growth rate to be lower than expected for 2015. Therefore, 2016 will be a year of adjustments and new regulations.

Hospitals: UnitedHealth acquired Hospital Samaritano for R\$ 1.3 billion. Proceeds from sale will be allocated to the charity supporting entity, which



will be detached from the hospital, and invest in other philanthropic activities. This is the first transaction of the sector involving a philanthropic hospital run by a charitable organization. UnitedHealth is the owner of Amil network. The group is today the world's largest in the industry. It was founded in 1977, in the United States, it has more than 210,000 employees, operates in 125 countries and their turnover in 2013 amounted to US\$ 130.5 billion, an increase of 6.5%.

The Barretos Cancer Hospital remained for six months without receiving around R\$ 24 million that should have been allocated by the state government. As a result, the hospital had to get a R\$ 30 million loan to keep operating. Barretos Cancer Hospital, the largest unit for treatment of the disease in the country, is responsible for servicing 5000 patients a day, all under the Unified Health System (SUS). Allocation was resumed in June with a promise that, each month, two installments would be paid to make up for the outstanding amount of the first semester. Nevertheless, the promise was only fulfilled for the months of June and July; only one installment

was paid in August and September. The hospital has to include donations made by celebrities to its budget to keep its door open.

Laboratories: Private equity firm Advent acquired, in September 2015, 13% equity in Fleury, in the amount of R\$ 400 million, the first business in healthcare closed by Advent in Brazil. The management firm is considering more businesses in health care, such as hospitals and medical diagnostic laboratories. It still has US\$ 1.6 billion to invest in Latin America. The sectors chosen as paramount by that management firm are health, education, financial services and infrastructure, among others. Unlike other industries in the current Brazilian economic scenario, Fleury estimates that its gross revenue will grow 11% between 2015 and 2020, above that expected for the diagnostic medicine segment, which is about 8.5%. Fleury has undergone internal restructuring that prepared it for the crisis. High dollar rates expected mainly for 2016 increased medical material costs by 10%, cost of supplies by 5% and investments between 20% and 50%.

Prospects for the industry

EPIDEMIOLOGICAL ISSUES

Life expectancy: Population ageing is a global trend. Over the coming years, according to projections of the United Nations organization (UN), the most advanced economies in the world will reach a critical mark. People of working age will decrease 5% by 2050 and the layer above the age of 65 will rise in all countries. The global population will have grown 32% by 2050, while the population in working age for the labor market (15-64 years) will have increased only 26%. In the light of such scenario, consumption behavior changes as people age. Such population demands more health services and less consumer goods such as cars. Another important factor is fertility rates, which are on the fall both in developed countries and in the least developed countries, which also affects the number of people in working age.

Current population trends are also changing. Government policies and changes in social attitudes may change. Countries such as Singapore, Australia and the Canadian province of Quebec, for example, have offered financial incentives to encourage couples to have more children and provide assistance to working mothers.

Breast cancer: Annual mortality rate due to breast cancer is 11 times higher in the poorest regions in Brazil than in more affluent areas, according to a study by the Brazilian Society of Mastology, in partnership with the Mastology Research Network of Goiás. The study indicates that difficult access to detection and treatment methods in the North

and Northeast of the country is the main reason for such imbalance. Breast cancer mortality rate in the southeast is higher than in other regions of the country, but the speed of death growth rate due to the disease is significantly higher in poorer areas.

Technology and innovation: There is a trend of increase of startups projects in health. The segment dedicates full-time to find new methods of diagnosis and treatment. Investment funds and healthcare businesses should invest, until 2017, nearly R\$ 17.43 billion in innovation projects.

Large demand of patients in SUS and insufficient service availability gives room to digital health trend, which seeks to serve patients that increasingly demand information and lay hold of technological devices such as computers, mobile and wearable devices. Innovations can improve quality and speed of government services in healthcare through solutions that meet the care deficit.

Today, over half the population has access to the internet. Web connections through smartphones have reached 136.6 million Brazilians, totaling 77.9% of the population, which demonstrates the great feasibility of using tools to improve customer service and expanding SUS coverage, even in areas where access is harder.

Surveys conducted by PwC forecast reduction of US\$ 14 billion in potential spending on health by 2017 if mobile technologies are used to take healthcare to 40 million people in remote areas in Brazil, thus preventing commuting to larger centers to get basic health care.



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