

Industry Performance Analysis

Preparing to serve the population in the Covid-19 pandemic increased the demand for niche products specific to the medical device and *in vitro* diagnostics market in the first half of 2020, such as: materials and equipment used in medium and high beds complexity and tests for its detection. The growth in imports of hospital equipment (+ 37%), **furnitures for odonto and hospital use** (+ 19%), personal protective equipment - PPE (+ 1929%) and reagents for *in vitro* diagnostics (+ 32%) reflect such an increase in demand. On the other hand, the cancellation of medical procedures unrelated to the pandemic reduced foreign purchases and domestic manufacturing of products from other segments. Drops in imports of products in all segments, excluding those mentioned above, portray this impact. (Chart 04)

The net effect for the Industry was the 3.5% decline in apparent consumption of Medical Devices, driven by the 27.1% drop in domestic production of locally manufactured medical devices and the 21.2% growth in total industry imports, all compared to the same period in 2019. (Charts 02 & 04)

The 5,325 dismissals distributed among branches of the medical device industry manufactured in Brazil, wholesale and retail trade are additional results of the retraction in the health market. (Chart 03)

Hospital and outpatient services (public and private) provide 4.3% of the country's economic activity, according to the IBGE. The retraction of the health industry in the first half of 2020, according to FGV, was responsible for 0.8% of the total "fall" of 5.9% in GDP in the first half, in relation to the same period of the previous year, that is, the slowdown in health industry had a 13.5% impact in the slowdown of the Brazilian economy.

Expectations are for a slight recovery in the MD industry in the second half and at the end of 2020 with a fall of 1% - 2%.

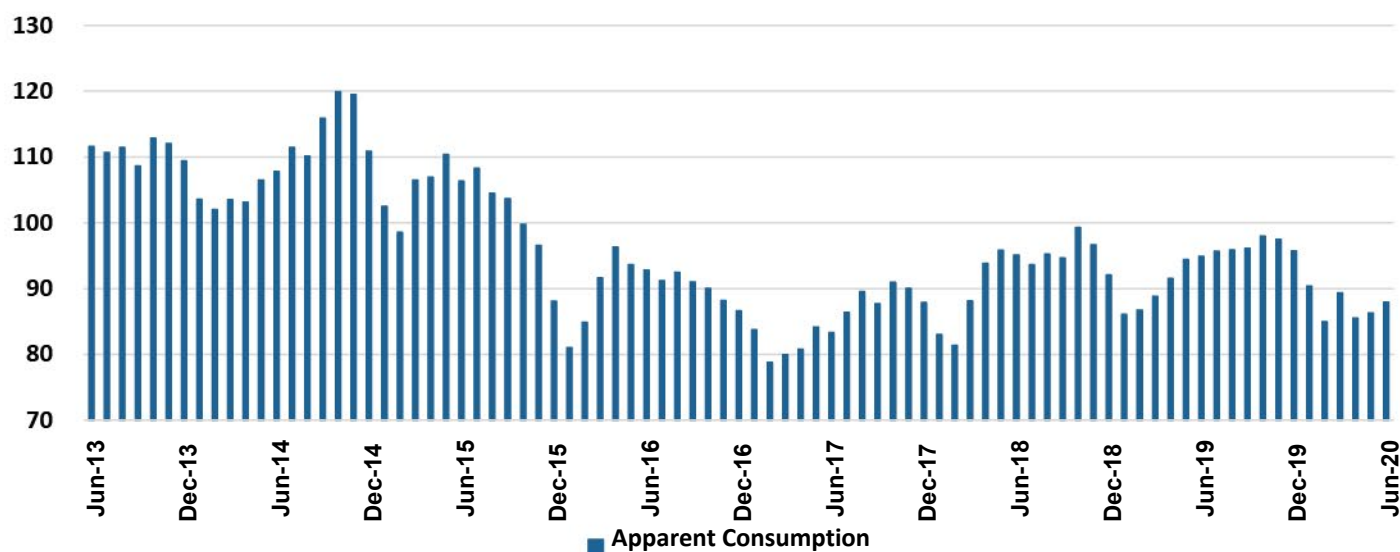
Overall Industry Performance

Chart 01. Production, sales, apparent consumption and prices - Variation % | Until June 2020

Indexes	Variation %	
	Acc. Year Jan-June 20 - Jan- June 19	12 months Jul19 Jun20/ Jul18 Jun19
Industry Production		
Instruments and materials for medical and dental use and optical items	-27.3%	-12.0%
Retail Sales		
Pharmaceutical, medical and orthopedic items	5.3%	6.3%
Apparent Consumption Index (Production + Imports-Exports)		
Total Medical Devices (MD + IVD)	-3.5%	-0.4%
Health materials and equipment	-12.9%	-4.9%
Prostheses and implants - OPME	-23.7%	-8.2%
Reagents and analyzers for <i>in vitro</i> diagnostics	1.5%	0.8%
Price Index		
Producer Price Index (PPI) - Manufacture of pharmaceutical products	6.5%	N.A.
Consumer Price Index (CPI) - Laboratory and hospital services	0.97%	N.A.
Consumer Price Index (CPI) - Social Security	4.2%	N.A.

Source: PIM-PF/IBGE & PMC/IBGE | Prepared by: Websetorial

Graphic 01. Evolution of apparent consumption or market for medical devices (MD) - In index number, quarterly moving average (average base 2012 = 100) | Until June 2020



Source: Aliceweb/ SECEX | Prepared by: Websetorial

Industry Employment Performance

The medical device industry, from January to June 2020, closed 5,235 vacancies, totaling 136,671 workers in the industrial and commercial activities in which it operates, a number that does not include employees in diagnostic and therapeutic complementation services.

Among the segments, the highlight is the 2,158 jobs that were eliminated in the “Industry of instruments and materials for medical and dental use and optical items”, according to data from the Novo CAGED.



Chart 02. Industry Employment - In number of workers and percentage (%) | Until June 2020

Segment	2020	2019	Contracting Balance	Variation %
	June	December		
	A	B	A-B	A/B -1
Employment				
Instruments and materials industry for medical and dental use and optical items	57,156	59,314	-2,158	-3.6%
Industry of electromedical and electrotherapeutic devices and irradiation equipment	5,460	5,284	176	3.3%
Wholesale trade inst. and mat. for medical, surgical, orthopedic and dental use	43,831	45,880	-2,049	-4.5%
Wholesale trade of machines, apparatus and equip. for dental-medical-hospital use	10,761	10,668	93	0.9%
Retail trade of medical and orthopedic items	19,463	20,760	-1,297	-6.2%
Total ABIIS	136,671	141,906	-5,235	-3.7%
Diagnostic and therapeutic complementation services	259,415	260,712	-1,297	-0.5%

Source: Novo Caged/MTE & Rais 2018 | Prepared by: Websetorial

Foreign Trade Performance

Accumulated from January to June 2020, imports of medical devices (MD) totaled US \$ 3.1 billion, with an increase of 21.2% over the same period in 2019. MD exports, in turn, totaled US \$ 338 million, also representing an increase of 16.8% in the referred period. The trade balance for the period was in a US \$ 2.8 billion deficit, showing that the pandemic caused by Covid-19 was reflected in the 21.8% increase in the industry's trade deficit.



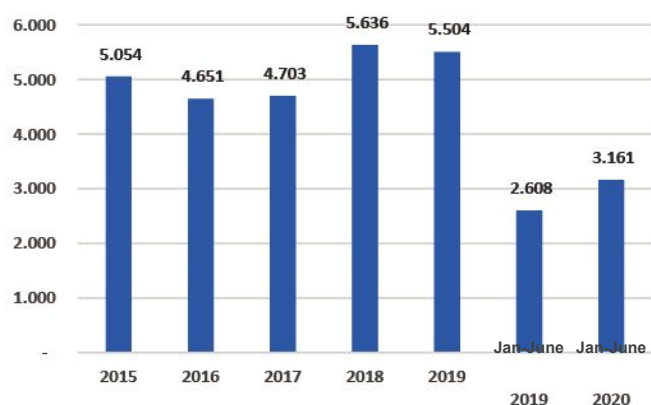
Chart 03. Brazilian foreign trade in medical device groups (MD) - In million dollars and in percentage variation (%) | Until June 2020

Segments	Acc. in the year		12 months		Variation %	
	Jan-June 20	Jan-June 19	Jul19-Jun20	Jul18-Jun19	Acc. in the year	12 months
Imports in million US\$						
Total Medical Devices	3,161	2,608	5,940	5,308	21.2%	11.9%
Health materials and equipment	2,205	1,735	4,300	3,509	27.1%	22.5%
Prostheses and implants - OPME	399	494	952	989	-19.2%	-3.7%
Reagents and analyzers for <i>in vitro</i> diagnostics	1,340	1,089	2,494	2,204	23.1%	13.1%
Exports in million US\$						
Total Medical Devices	338	290	673	607	16.8%	10.9%
Health materials and equipment	256	277	570	588	-7.4%	-3.2%
Prostheses and implants - OPME	88	118	224	244	-25.5%	-8.4%
Reagents and analyzers for <i>in vitro</i> diagnostics	114	66	189	144	71.2%	31.9%
Trade Balance in million US \$						
Total Medical Devices	-2,823	-2,318	-5,267	-4,702	21.8%	12.0%
Health materials and equipment	-1,455	-1,414	-2,929	-2,872	2.9%	2.0%
Prostheses and implants - OPME	-311	-376	-729	-745	-17.2%	-2.2%
Reagents and analyzers for <i>in vitro</i> diagnostics	-1,227	-1,022	-2,304	-2,061	20.0%	11.8%

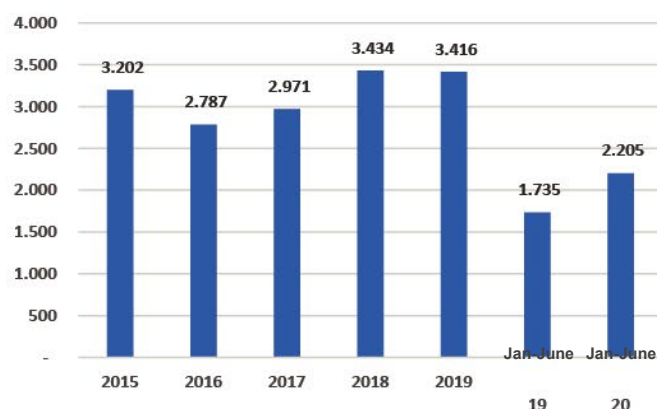
Source: Aliceweb/ SECEX | Prepared by: Websetorial

Graphics 02-05. Brazilian imports of medical devices (MD)

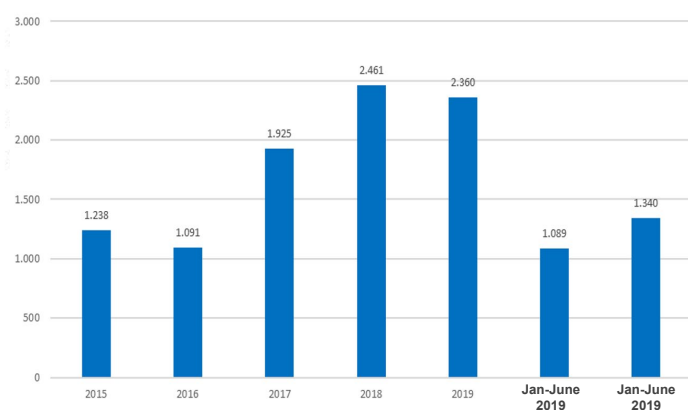
In million dollars | Years 2015-2019 and January to June 2019 and 2020

Graphic 02. Total Medical Devices (MD)

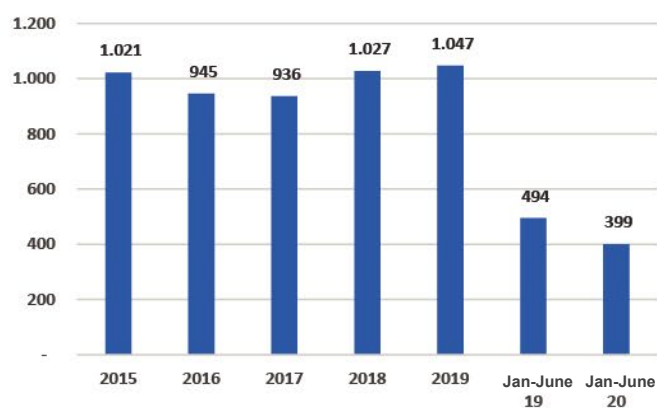
Source: Aliceweb/ SECEX | Prepared by: Websetorial

Graphic 03. Health materials and equipment

Source: Aliceweb/ SECEX | Prepared by: Websetorial

Graphic 04. *In vitro* Diagnostics: Reagents and analyzers for diagnostics

Source: Aliceweb/ SECEX | Prepared by: Websetorial

Graphic 05. Prostheses and implants - OPME

Source: Aliceweb/ SECEX | Prepared by: Websetorial

Chart 04. Brazilian medical devices (MD) imports and exports by category - In million dollars and in percentage variation (%) | Until June 2020

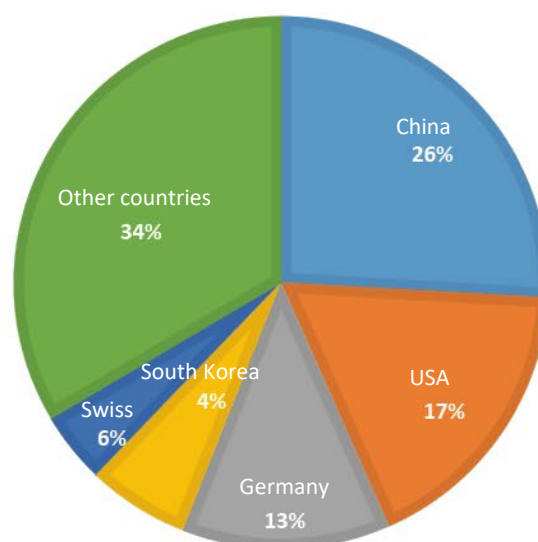
Segments	Acc. in the year		12 months		Variation %	
	Jan-June 20	Jan-June 19	Jul19-Jun20	Jul18-Jun19	Acc. in the year	12 months
Imports in million US\$						
Audiology	48	49	113	105	-2%	8%
Cardiovascular	85	121	216	231	-30%	-6%
Other equipment for hospital use including laser	525	383	899	776	37%	16%
Personal Protective Equipment (PPE)	328	16	346	34	1929%	919%
Equip. and OPME support material	187	205	420	412	-9%	2%
Equip. for diag. per image and supplies	279	284	572	581	-2%	-2%
Laboratory equipment	146	171	308	354	-15%	-13%
Materials and devices for dentistry	42	50	114	117	-15%	-3%
Materials and supplies for medical use. hosp.	416	441	891	888	-6%	0%
Furniture for odonto hospital use	23	20	48	47	19%	3%
Ophthalmology	30	48	82	95	-38%	-14%
Orthopedics	85	109	209	228	-22%	-8%
Reagents for IVD	1,154	876	2,083	1,762	32%	18%
IVD equipment and analyzers	186	213	410	442	-13%	-7%
Exports in million US\$						
Audiology	2	3	5	5	-18%	17%
Cardiovascular	19	37	61	68	-49%	-11%
Other equipment for hospital use including laser	23	28	52	56	-18%	-6%
Personal Protective Equipment (PPE)	39	1	40	2	2802%	1639%
Equip. and OPME support material	25	28	56	60	-12%	-7%
Equip. for diag. per image and supplies	16	15	31	29	9%	6%
Laboratory equipment	5	8	13	16	-34%	-17%
Materials and devices for dentistry	22	27	57	58	-19%	-2%
Materials and supplies for medical use. hosp.	141	136	289	301	4%	-4%
Furniture for odonto hospital use	5	3	9	8	81%	23%
Ophthalmology	97	104	214	225	-7%	-5%
Orthopedics	23	21	51	46	7%	10%
Reagents for IVD	107	59	174	127	82%	37%
IVD equipment and analyzers	6.6	7.7	15.8	16.6	-15%	-5%

Source: Aliceweb/ SECEX | Prepared by: Websetorial

Origin of imports of medical devices in the first half of 2020

Accumulated from January to June 2020, China was the main medical device (MD) exporter to Brazil, totaling Brazilian purchases of US \$ 818.6 million, which represented 26% of the industry's imports. The United States of America ranked second, with Brazilian imports worth US \$ 552.7 million, occupying the 17% market share and Germany US \$ 398.8 million with 13% MD imported by Brazil in the referred period. About 96% of PPE Brazilian imports came from China, which represented US \$ 315 million. (Graphic 06 and Chart 05)

Graphic 06. Countries of origin of Brazilian MD imports In US\$ | Until June 2020



Source: Comex Stat | Prepared by: Websetorial

Chart 05. Main countries of origin of Brazilian imports in the medical device (MD) groups - In million dollars (US \$) and share (%) | Accumulated from January to June 2020

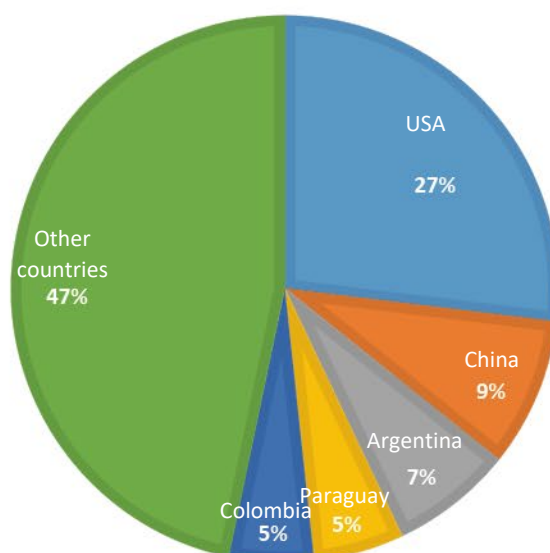
Segments	Total imports in million US\$	Main country of origin of imports	Amount imported from the main partner	Partner share in total (%)
ABIIS	3,161	China	819	26%
Audiology	48	Swiss	9	18%
Cardiovascular	85	USA	21	24%
Other equipment for hospital use including laser	525	China	224	43%
Personal Protective Equipment (PPE)	328	China	315	96%
Equip. and OPME support material	187	USA	58	31%
Equip. for diag. per image and supplies	279	China	78	28%
Laboratory equipment	146	USA	44	30%
Materials and devices for dentistry	42	China	9	21%
Materials and supplies for medical use. hosp.	1,667	China	398	24%
Furniture for odonto hospital use	23	China	10	43%
Ophthalmology	30	USA	14	45%
Orthopedics	85	USA	28	34%
Reagents for IVD	509	USA	133	26%
IVD equipment and analyzers	186	USA	58	31%

Source: Aliceweb/ SECEX | Prepared by: Websetorial

Destination of medical device exports in the first half of 2020

From January to June 2020, the United States was the main destination country for Brazilian medical device (MD) exports, totaling purchases worth US \$ 91 million, which represented 27% of the total. In second place was China with purchases worth US \$ 29.7 million, representing 9% of the market share. Following the important customers of Brazilian products in the industry are: Argentina with US \$ 24 million purchases (7%), Paraguay, US \$ 18 million (5%) and Colombia US \$ 17 million (5%). Among the specific segments, the North American purchases of US \$ 42.3 million in Reagents for Brazilian IVD in the semester stand out, which corresponded to 40% of the total exported in this market segment.

Graphic 07. Destination countries for Brazilian MD exports - In US\$ | Until June 2020



Source: Comex Stat | Prepared by: Websetorial

Chart 06. Main countries of destination of Brazilian exports in the medical device (MD) groups - In thousand dollars (US \$) and share (%) | Accumulated from January to June 2020

Segments	Total export in million US\$	Main country of destination of exports	Amount exported to the main partner	Partner share in total (%)
ABIIS	338,284	USA	91,091	27%
Audiology	2,497	USA	1,212	49%
Cardiovascular	18,672	Swiss	6,530	35%
Other equipment for hospital use including laser	22,626	USA	5,549	25%
Personal Protective Equipment (PPE)	38,549	China	18,847	49%
Equip. and OPME support material	25,041	USA	12,181	49%
Equip. for diag. per image and supplies	16,461	China	6,599	40%
Laboratory equipment	5,038	USA	1,888	37%
Materials and devices for dentistry	21,690	USA	4,366	20%
Materials and supplies for medical use. hosp.	96,952	USA	19,719	20%
Furniture for odonto hospital use	5,062	Peru	2,179	43%
Ophthalmology	271	USA	191	71%
Orthopedics	22,664	Colombia	8,142	36%
Reagents for IVD	106,385	USA	42,379	40%
IVD equipment and analyzers	6,591	USA	2,439	37%

Source: Aliceweb/ SECEX | Prepared by: Websetorial

Number of health establishments and beds in the SUS (Public Health System) and Non-SUS networks

Chart 07. Brazil: Total number of establishments in the SUS and Non-SUS networks | Until June 2020

Establishments	SUS			Non-SUS		
	Jun20	Dez19	Balance (Jun20/Dez19)	Jun20	Dez19	Balance (Jun20/Dez19)
Hospitals (Specialized, General and Day)	2,715	2,448	10.9%	2,407	2,463	-2.3%
Specialized Clinics / Specialized Outpatient Clinics	5,402	5,281	2.3%	38,023	44,152	-13.9%
Doctor's Offices	891	917	-2.8%	148,123	169,703	-12.7%
Home Care	44	36	22.2%	727	815	-10.8%
Diagnosis and Therapy Support Service	1,911	1,879	1.7%	22,969	23,749	-3.3%
Polyclinic	1,567	1,560	0.4%	6,920	7,059	-2.0%
Emergency Room	1,180	1,122	5.2%	98	91	7.7%
General and Specialized Emergency Services	284	295	-3.7%	91	108	-15.7%
Psychosocial-caps care center	3,089	3,055	1.1%	1	1	0.0%
Other	69,753	68,899	1.2%	3,766	3,559	5.8%
Total	86,836	85,492	1.6%	223,125	251,700	-11.4%

Source: DATASUS| Prepared by: Websetorial

Establishments: According to the National Register of Health Establishments (CNES), in June 2020, 86,836 health establishments were registered in the public service network, compared to 85,492 in December 2019, resulting in the creation of 1,344 new establishments. In the Non-SUS network, it is noted that in the period 28,575 establishments were closed, of which 21,580 were doctor's offices. According to information obtained by the Websetorial team from CNES, the exclusions are probably due to the application of Ordinance No. 118 issued on February 18, 2014, from the Ministry of Health / Health Care Secretariat - MS / SAS,

which automatically deactivates the CNES of Health establishments that have been inactive for more than 6 (six) months without updating their registration. Thus, deactivations include lack of information and closings. (Chart 07)

Beds: The Unified Health System (SUS), until June 2020, accounted for 359,603 beds in the country, between general and complementary beds. When comparing June 2020 with December 2019, 32,568 new beds were opened in the SUS, from which 8,517 new adult ICU II and 247 pediatric ICU II stand out, both intended for the Covid-19 treatment, in addition to opening 22,102 general beds. (Chart 08)

Chart 08. Brazil: Number of beds in the SUS and Non-SUS networks | In units and percentage variation (%)
Comparison June 2020-December 2019

Specialty	SUS			Non-SUS		
	2020	2019	Variation %	2020	2019	Variation %
	June	December	Balance (Jun20/Dez19)	June	December	Balance (Jun20/Dez19)
General beds total	317,070	294,968	7.5%	131,853	135,634	-2.8%
Surgical	70,801	74,454	-4.9%	40,775	42,199	-3.4%
Clinical	133,511	106,794	25.0%	46,688	47,433	-1.6%
Obstetric	38,534	38,799	-0.7%	12,688	13,098	-3.1%
Pediatric	37,657	38,191	-1.4%	10,115	10,353	-2.3%
Other Specialties	31,688	31,827	-0.4%	15,765	16,571	-4.9%
Hospital/Day	4,879	4,903	-0.5%	5,822	5,980	-2.6%
Complementary beds total	32,407	32,067	1.1%	27,950	27,728	0.8%
Adult ICU II COVID-19	8,517	0	N/A	10,600	0	N/A
Pediatric ICU II COVID-19	247	0	N/A	461	0	N/A
Intermediate unit	5,903	5,548	6.4%	3,649	3,427	6.5%
Neonatal Intermediate unit	330	354	-6.8%	19	19	0.0%
Isolation unit	4,453	3,288	35.4%	1,209	1,097	10.2%
Adult ICU	15,122	14,925	1.3%	16,464	16,044	2.6%
Pediatric ICU	2,637	2,617	0.8%	2,266	2,225	1.8%
Neonatal ICU	4,871	4,875	-0.1%	4,280	4,196	2.0%
Burned ICU	158	158	0.0%	75	78	-3.8%
Type II coronary ICU -UCO	295	302	-2.3%	793	642	23.5%
Beds total	359,603	327,035	10.0%	171,669	163,362	5.1%

Source: DATASUS| Prepared by: Websetorial

Number of hospital admissions for procedures performed in SUS

According to Datasus data referring to the number of hospitalizations performed in the Unified Health System (SUS), from January to June 2020, there were about 5.1 million hospitalizations, 15% below the same period of the previous year. Among the subgroups of hospital procedures, it is noted that hospitalizations for endocrine surgeries had the greatest reduction in

the period of about 44%. Other significant reductions occurred in hospital admissions for diagnostic methods in specialties, with a drop of 42% in the period in question and in vision surgery (-40%). (Chart 09)

Chart 09. Brazil: Total number of hospital admissions in SUS - In units and percentage variation (%)

Procedure subgroup	Jan-June 2020 (A)	Jan-June 2019 (B)	Variation % (A) / (B)
Material collection	4,873	5,719	-15%
Diagnosis by endoscopy	3,363	3,724	-10%
Diagnostic methods in specialties	2,383	4,123	-42%
Consultations / Assistance / Accompaniments	163,288	190,934	-14%
Clinical treatments (other specialties)	2,040,904	2,358,706	-13%
Oncology treatment	166,764	172,840	-4%
Nephrology treatment	105,834	126,503	-16%
Treatment of injuries, poisonings and others, resulting from external causes	116,551	126,943	-8%
Delivery and birth	514,590	568,830	-10%
Minor surgeries and skin, subcutaneous tissue and mucosa surgeries	39,882	61,132	-35%
Endocrine gland surgery	3,545	6,362	-44%
Central and peripheral nervous system surgery	36,988	44,995	-18%
Upper airways, face, head and neck surgeries	45,058	66,114	-32%
Vision system surgery	34,339	56,940	-40%
Circulatory system surgery	118,572	147,098	-19%
Digestive system, attached organs and abdominal wall surgeries	272,237	392,504	-31%
Musculoskeletal system surgery	343,017	389,185	-12%
Genitourinary system surgery	167,295	252,835	-34%
Breast surgery	10,949	17,432	-37%
Obstetric surgery	526,831	549,870	-4%
Thoracic surgery	27,875	29,548	-6%
Reconstructive surgery	23,877	29,917	-20%
Maxillofacial surgery	4,642	6,938	-33%
Other surgeries	271,280	298,816	-9%
Oncology surgery	69,429	77,140	-10%
Collection and testing for organ, tissue and cell donation and transplantation	342	370	-8%
Actions related to organ and tissue donation for transplantation	9,836	11,278	-13%
Processing tissue for transplantation	589	782	-25%
Organ, tissue and cell transplantation	5,834	6,892	-15%
Monitoring and complications in the pre and post-transplant	17,769	19,930	-11%
Total	5,148,736	6,024,400	-15%

Source: DATASUS| Prepared by: Websetorial

Number of surgeries at SUS

In June 2020, in comparison to December 2019, according to the National Register of Health Establishments - CNES, 28,575 Registrations of establishments dedicated to private health in Brazil were deactivated. According to information obtained by the Websetorial team from the CNES, the exclusions are probably due to the application of Ordinance No. 118 issued on February 18, 2014, from the Ministry of Health / Health Care Secretariat - MS / SAS, which automatically disables the CNES from Health establishments that

stayed for more than 6 (six) months without registration update. Thus, deactivations include lack of information and closings. (Table 07) Due to the Covid-19 pandemic in Brazil, elective surgeries have been reduced for fear of contamination and to avoid a possible breakdown in the ICUs. According to Datasus data, we can see the epidemic led to an 18% reduction in the number of surgeries performed at SUS, in the first half of 2020, compared to the same period in 2019. (Chart 10)

Chart 10. Brazil: Total number of hospital surgeries approved by SUS - In units and percentage variation (%) | Accumulated from January to June 2020

Surgeries	Jan-June 2020 (A)	Jan-June 2019 (B)	Variation % (A) / (B)
Minor surgeries and skin, subcutaneous tissue and mucosa surgeries	39,882	61,132	-35%
Endocrine gland surgery	3,545	6,362	-44%
Central and peripheral nervous system surgery	36,988	44,995	-18%
Upper airways, face, head and neck surgeries	45,058	66,114	-32%
Vision system surgery	34,339	56,940	-40%
Circulatory system surgery	118,572	147,098	-19%
Digestive system, attached organs and abdominal wall surgeries	272,237	392,504	-31%
Musculoskeletal system surgery	343,017	389,185	-12%
Genitourinary system surgery	167,295	252,835	-34%
Breast surgery	10,949	17,432	-37%
Obstetric surgery	526,831	549,870	-4%
Thoracic surgery	27,875	29,548	-6%
Reconstructive surgery	23,877	29,917	-20%
Maxillofacial surgery	4,642	6,938	-33%
Other surgeries	271,280	298,816	-9%
Oncology surgery	69,429	77,140	-10%
Total	1,995,816	2,426,826	-18%

Source: DATASUS | Prepared by: Websetorial

Number of procedures for diagnostic purposes in SUS outpatient care

The tests performed in outpatient care in the Unified Health System (SUS) had a reduction of 26% in the first half of 2020. In the total from January to June 2020 at SUS, approximately 358.7 tests were performed, compared to 484.1 tests performed in January to June 2019. (Chart 11)

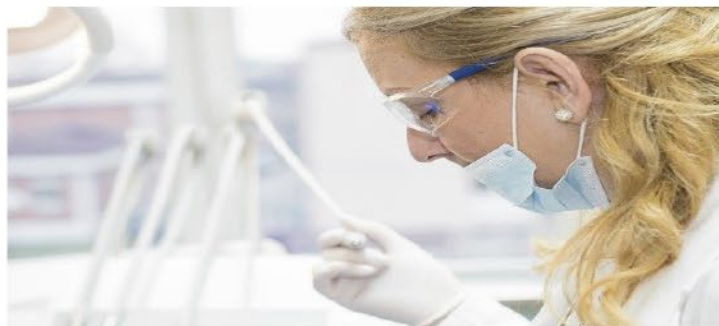


Chart 11. Brazil: Total number of procedures for diagnostic purposes at SUS - In thousand units and percentage variation (%) | Accumulated from January to June 2020

Procedure subgroup	Jan-June 2020 (A)	Jan-June 2019 (B)	Variation % (A) / (B)
Material collection	15,475	25,614	-40%
Diagnosis in clinical laboratory	265,962	354,954	-25%
Diagnosis by pathological anatomy and cytopathology	3,834	5,753	-33%
Diagnosis by radiology	22,440	31,435	-29%
Diagnosis by ultrasonography	6,418	9,358	-31%
Tomography diagnosis	2,774	2,859	-3%
Magnetic resonance imaging	536	671	-20%
<i>In vivo</i> nuclear medicine diagnosis	169	223	-24%
Diagnosis by endoscopy	613	1,030	-41%
Diagnosis by interventional radiology	21	27	-23%
Diagnostic methods in specialties	15,750	23,588	-33%
Diagnosis and special procedures in hemotherapy	7,331	8,255	-11%
Diagnosis in epidemiological and environmental surveillance	656	626	5%
Rapid test diagnostics	16,769	19,669	-15%
Total	358,746	484,063	-26%

Source: DATASUS| Prepared by: Websetorial



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